MIGRATION, ETHNICITY, OCCUPATION AND RESIDENCE IN CONTRASTING WEST OF SCOTLAND SETTLEMENTS: THE CASE OF THE VALE OF LEVEN AND DUMBARTON: 1861-1891

BY

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LIST OF ABBREVIATIONS

CEB	=	Census Enumerators Book
CRG	=	Co-residing Group
DH	=	Dumbarton Herald
ED	=	Enumeration District
ID	=	Index of Dissimilarity
IS	=	Index of Segregation
LH	=	Lennox Herald
LQ	=	Location Quotient
OSA	=	Old Statistical Account
NSA	=	New Statistical Account

ACKNOWLEDGEMENTS

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Computerising the census records and manipulating the data bases were central to the completion of this work. Consequently the help given by three computer experts to a floundering novice was absolutely vital. Grateful thanks are due to two staff members of the Glasgow University Computer Centre. Aileen Urquhart who swept aside administrative obstacles and arranged for time and space to be made available on an overworked mainframe, and John Buchanan who in the face of a busy schedule took time to offer some sound advice providing thoughtful and clear answers to what must have seemed inane or basic questions. Thirdly a special debt is due to Eddie Toole, who in using his own time equipment and expertise to run programs saved literally months on travel to the Computer Centre.

Typing a thesis is a daunting task. In this case made more difficult by a scratchy writing style and a number of dense and difficult tables. I am very grateful to Kathleen McShane who did some initial drafts of earlier chapters, Bunty Edgar whose generous and thoughtful help in ironing out considerable administrative difficulties helped secure the services of an excellent and efficient typist in Jacqueline Wellington, who has produced neatness, order and consistency where none existed in the hand written script.

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Lastly, it is usually incumbent upon the writer of a thesis to acknowledge the help of his supervisor. In this case it is not merely duty nor courtesy to thank Andy Gibb for his contribution. His enthusiasm and industry are well known to anyone who has had contact with the Glasgow Department or who has an interest in Scottish Geography. I should like to thank him most particularly, not only for these talents which he has employed on my behalf, for his ability to circumvent difficulties, for his skill in engendering and maintaining interest in what must be a long term project for a part-time student, as well as for his unfailing encouragement, but most of all for the friendship which we and our families have enjoyed over the years.

SUMMARY (ABSTRACT)

The Social Geography of Britain's 19th century towns and cities has tended to find its focus, with a few notable exceptions, in the larger English industrial towns. Residential differentiation and population mobility have been favourite themes.

In contrast, this study is a broad based one highlighting smaller Scottish settlements over the 1861 to 1891 period. Residential differentiation and population mobility, at the mezo - rather than the micro-scale, are considered but so are the industrial and occupational structures which are regarded as vital to any understanding of Dumbarton and the Vale of Leven's socio-spatial evolution over the latter part of the 19th century.

Dumbarton and the Vale of Leven were chosen as subjects, being spatially close and yet historically and industrially very different. Dumbarton a Royal Burgh since 1222, industrialized very rapidly in the period considered here, in the second and more successful wave of industrialization associated with shipbuilding and heavy engineering. Whereas the Vale's planned, or partly planned, villages were 18th century creations whose prosperity rested on the first wave of industrialization associated principally with textile manufacture and processing. By the mid-to late-Victorian period the bleach, print and dye industry of the Vale of Leven was showing palpable signs of decline.

The main primary source for this study has been the census enumerators books for the years 1861, 1871, 1881 and 1891. The total sample consisting of 3,800 census families

(400 from Dumbarton, 400 from the Vale of Leven for 1861; 500 from either area for each census year thereafter) or c 17,500 individuals.

After a consideration of previous work on 19th century towns, particularly that on residential differentiation and on migration (Chapters 2 and 3) local context is provided through use of the printed census reports for Dumbarton and the Vale of Leven for the 1861 to 1891 period. Emphasis here is on census family or co-residing group (crg) size and housing units (Chapter 6).

Industrial and occupational structures are the subjects of Chapters 8, 9 and 10. A major contrast being the differing role of the sexes in the employed sector of each community. The changing social structure, through time and at either location is also investigated here. Whereas initial categorization of occupations was almost self evident, social status classifications have been fraught with controversy. By using two social classification schemes, the preferred one for 19th century Dumbarton and the Vale of Leven (Anderson 1972) and a broad but widely used scheme based on the 1951 Registrar General's Scheme (Armstrong 1974) an attempt is made, not only to examine social stability and change at either location, but also to highlight how different classification schemes affect both the exposition and explanation of that change.

In the industrializing West of Scotland population was very mobile. Migration was vital to the growth of industrial towns and it is a major theme here. Net inflows and outflows of 'local' and 'non-local' born adults are discussed in parallel with the development of the local economy (Chapters 11 & 12). The 'non-local' or 'migrant' stream is then examined in greater detail. Irish, 'nearby Scots' that is, those born outwith the contiguous counties and

Ayrshire, and 'others' are viewed in terms of the movement of young adults. Individual county contributions to the peopling of Dumbarton and the Vale of Leven are also a focus (Chapter 14).

The Irish were the most distinct ethnic group from outwith the study area and its regional setting, Their reception, assimilation, migrational trends and their occupational and social structures are contrasted with those of the 'nearby Scots' (Chapters 13 & 15).

Finally Chapters 16 and 17 examine residential differentiation by occupation, social status and ethnic group. Both within these chapters and in the concluding chapter (Chapter 18) attempts are made to separate the particular from the general causes of the observed patterns and thereby to consider principally the causes, but also the mechanics of 19th century residential differentiation.

CHAPTER 1: THE CHOICE OF DUMBARTON AND THE VALE OF LEVEN IN THE STUDY OF NINETEENTH CENTURY ETHNICITY, MIGRATION AND OCCUPATION

INTRODUCTION

When attempting to place a study in context as in Chapters 2 and 3 here, it is imperative to consider previous work in similar or related fields. An explanation is offered as to how the task in hand borrows from, builds upon and departs from this accumulated body of knowledge. In short, the background to the methods of analysis employed and the topics chosen for study are revealed. Often, as in this case, it is also vital to explain why a certain geographical area has been selected for investigation. This is especially necessary where the main data source.the census enumerators books, (often referred to hereafter as the cebs) and the main realms of interest (ethnicity, migration and occupation) have been investigated previously for other areas, albeit using different methods from those employed here. In the main these other studies have concentrated on English towns and cities with a resulting lack of empirical research on Scottish towns [1] or rural areas. However, this alone does not justify the present choice of Dumbarton and the Vale of Leven.

Without prejudging or prejudicing the results to follow, there have to be reasons why this area was of especial significance. The answer lies in the fact that in close proximity to each other lay settlements with substantially different histories, and, in the 19th century, crucially discrete industrial bases. It is tempting to suggest that here is the industrial West of Scotland in microcosm; for there were planned villages and a royal burgh, textiles and heavy industries, all within a 5 mile stretch of the Leven valley.

DUMBARTON: BACKGROUND HISTORY UP TO 1850

Dumbarton Rock, at the confluence of the River Leven and River Clyde, acted as the first significant focal point for settlement in the Leven valley since Iron Age times. It was recognised as Ailecluithe, Altclut or Alclut, among many other similar names, which translated mean 'Clyde Rock'. This was the fortress capital of Strathclyde in the Dark Ages (MacPhail 1979). By the time a weakly unified Scottish kingdom had come into being in the 11th century, it was known in Scots Gaelic as Dun Breatann or 'Fort of the Britons', from which the present name is derived.

The garrison stationed at Dumbarton Rock promoted the setting up of the royal burgh nearby. This new burgh was given its Charter in 1222 by Alexander the Second. It was a planned burgh and, if physiographic differences are considered, it neatly fits the 'Edinburgh model' common to other royal burghs such as Forres and Elgin. The basic plan usually incorporates a castle, with a long, wide and relatively straight 'High Street' which begins close to the castle gates. In Dumbarton's case the twice daily flooding of land next to the Castle Rock meant that the burgh had to be planted just over a mile to the north-west; its High Street gently curving as it follows the course of a bend in the River Leven.

Throughout the 20th century there has been a good deal of debate and speculation over the foundation, origins and evolution of the Scottish burghs. Adams (1978) has succinctly précised the main theories which have emerged. Briefly, the Garrison Theory suggested that burghs were fundamentally military and administrative foundations; the Commercial Theory stated that burghs were set up as central (trading) places; the main idea behind the Communal or Territorial Theory was that the basis of burgh life was a community of freedom united in holding territory and controlling the burgh's affairs; and the Creation Theory defined the granting of burgh status as a creative act. Adams himself

suggested that an Emulation Theory might be more appropriate; that is, towns were seen as useful in fulfilling functions; they were already successful Anglo-Norman institutions and consequently it was deemed desirable that Scotland should modernise in similar manner. This explanation is more plausible than the earlier theories, none of which adequately fitted the majority of burghs over a long period of time. Earlier burghs were most probably founded for different reasons than later ones and the functions of burghs changed through time. The theories do, however, help to define the major functions of burghs. Dumbarton could be said to fit all four of the earlier theories: it did play a defensive role initially; it had a trading function, holding weekly markets and annual fairs; burgesses were encouraged to come into the burgh by the promise of kirset [2] and the land; and it was a newly created entity in 1222 when its charter was granted.

Little is known of Dumbarton's early history, but it would appear that from map evidence, reports from the Convention of Royal Burghs and other, secondary, sources [3] that up until the late 18th century Dumbarton was in a rather moribund state. Frequent flooding, the lack of trade and the small size of the burgh provide sharp contrasts to the growing prominence of Glasgow, 15 miles further up the Clyde. Glasgow and Dumbarton entered into numerous trading and fishing disputes which arose due to apparent contraditions and ambiguities in successive burgh charters (Marwick 1909). As if to emphasise their superiority, the burgesses of Glasgow made representations to those of Dumbarton with regard to setting up a port at the burgh. Dumbarton turned Glasgow down for no good reason, and Port Glasgow was subsequently built at Newark on the south bank of the Clyde.

One episode which serves to exemplify the inefficiency of the burgh's decision making machinery was its attempts to have a bridge built over the Leven. This decision was taken in 1682. Stone was ordered for this purpose, but was sold off again in 1691. Work did not begin until 1754 and the bridge was finally completed in 1765; 83 years after the idea was first seriously broached.

The first factory industry of any note to set up in Dumbarton was the Glassworks built by the Dixon family in 1777. Such was the poverty of the burgh prior to this that the Glassworks, employing around 300 people, had a profound impact on its economy, with the result that when the factory closed down temporarily, the effect were startingly obvious. The High Street and Bridge Street became overgrown, and rents dropped as landlords were keen to retain tenants who would have moved away otherwise, leaving properties empty.

The Glassworks did reopen, but was not a success and it was the effect of shipbuilding which was to transform the whole fabric of burgh life. There had been boatyards along the Leven for several centuries, but it was not until the 1840's when larger and more technically advanced vessels were built, that shipbuilding became the pre-eminent industry in Dumbarton.

THE VALE OF LEVEN: BACKGROUND HISTORY UP TO 1850

The pre-industrial nucleus of the Vale of Leven was at the present site of Bonhill village, which gave the parish its name and contained the church and school. As late as 1755, when the population of Dumbarton was around 1480, the remainder of the valley was predominantly rural in character with c901 people in the whole of Bonhill parish. Dumbarton's burgh status, which embodie trading rights, may have retarded any possible urban growth prior to this. Ross's map of the County of Dumbarton (1777) shows a number of estates, gentlemen's houses and small farms, but no bona fide village was in evidence.

Industry, had, however, established a foothold in the valley around fifty years earlier when William Stirling set up bleachfields at Dalquhurn (Renton). The Board of Trustees for Improving Fisheries and Manufactures in Scotland are recorded as granting money for this purpose in 1727.

Bleaching was initially a small scale, seasonal concern which relied greatly on sunshine to assist in the bleaching of the cloth and attracted temporary migrants who worked, during summer in the open air bleachfields. Technical advances freed firstly bleaching and then printing and dyeing from reliance on sunshine, seasonality and time-consuming processes. It was only in the 1830's and 1840's that the industry became a full time burgeoning practice which attracted substantial numbers of "permanent" settlers to the recently founded villages of Renton and Alexandria and to the growing village of Bonhill.

The locational factors which had attracted the bleachfields' proprieters and which were to lead to a concentration of bleach, print and dye works along the river were mainly concerned with the inexhaustible supply of fresh, soft water which the Leven taps from Loch Lomond. This water was needed to wash and rinse cloth and to dilute chemicals. In the early days of the industry water was used in power raising, via the narrow lades which led to water wheels. Latterly it was used in steam raising. Wallwork (1965) stated that a large printwork used as much as 400 million gallons of water annually. Indeed the lack of a dependable water supply led to the failure of many works to expand and to their eventual demise. The river was, of course, used as a sewer to dispense with pollutants and its meanders both facilitated the diversion of the water as well as the disposal of effluent, as shown in figure 1.1.

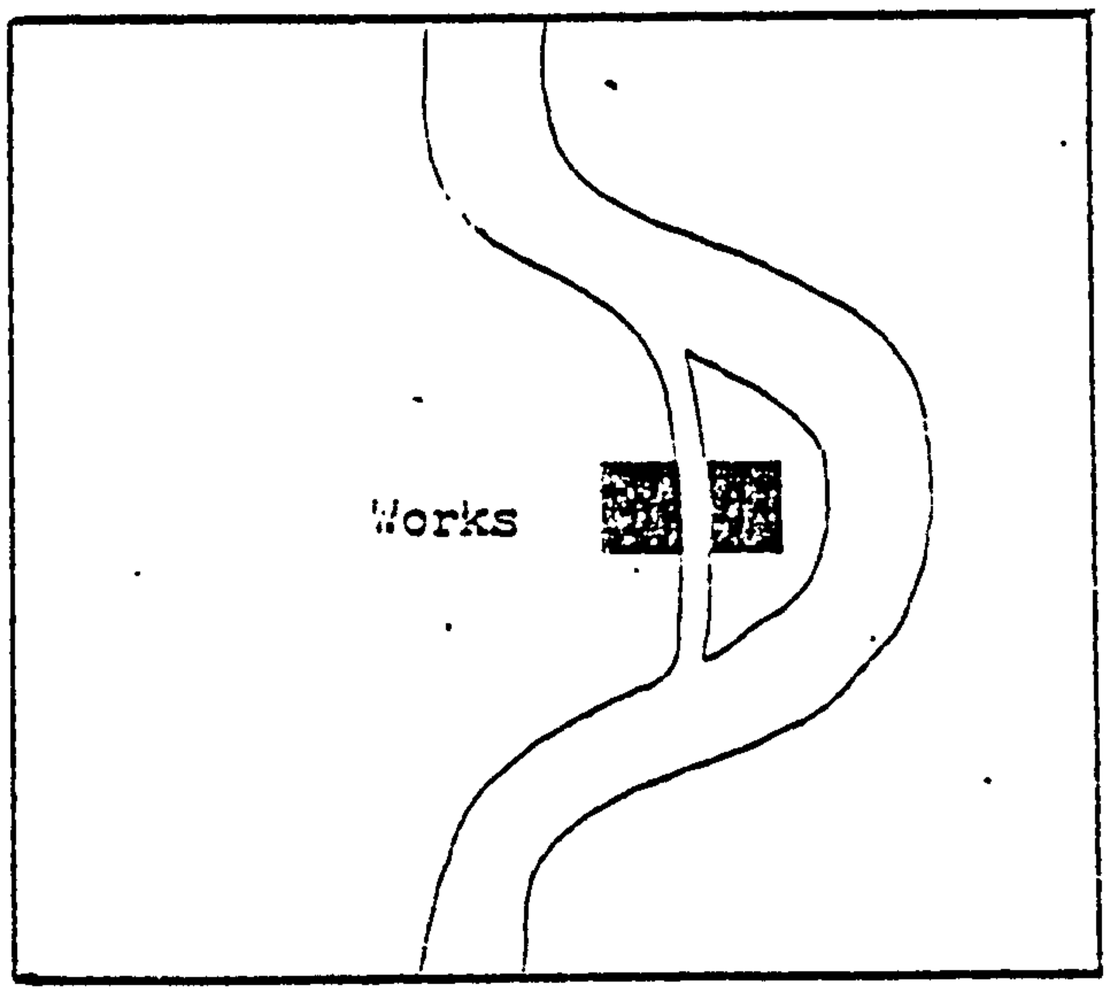


Fig 1:1 above shows the use of the Leven's meander loops by the Works. The small canal or lade running through the works provided water for power, for dilution and rinsing and for disposal of effluent.

The careful locational choice doubtless contributed to the success of the operations. Consequently it was here, in these new villages, where true factory industry became firmly established for the first time in Dumbarton and the Vale of Leven. The old burgh had been partially, if temporarily, eclipsed by the thriving 'industrial colonies' to the north. (Marshall 1968).

POPULATION IN DUMBARTON AND THE VALE OF LEVEN - 1801-1851

Figure 1:2 illustrates the effect of industry on the populations of Dumbarton and the Vale of Leven. Cardross Parish is included as it contained Renton which, although it did not account for the majority of the parish's population, did account for much of the increase in this period, (NSA Cardross Parish Vol VIII) but as the exact number of those living on the Leven's banks cannot be determined with accuracy, it is excluded from the following comments:

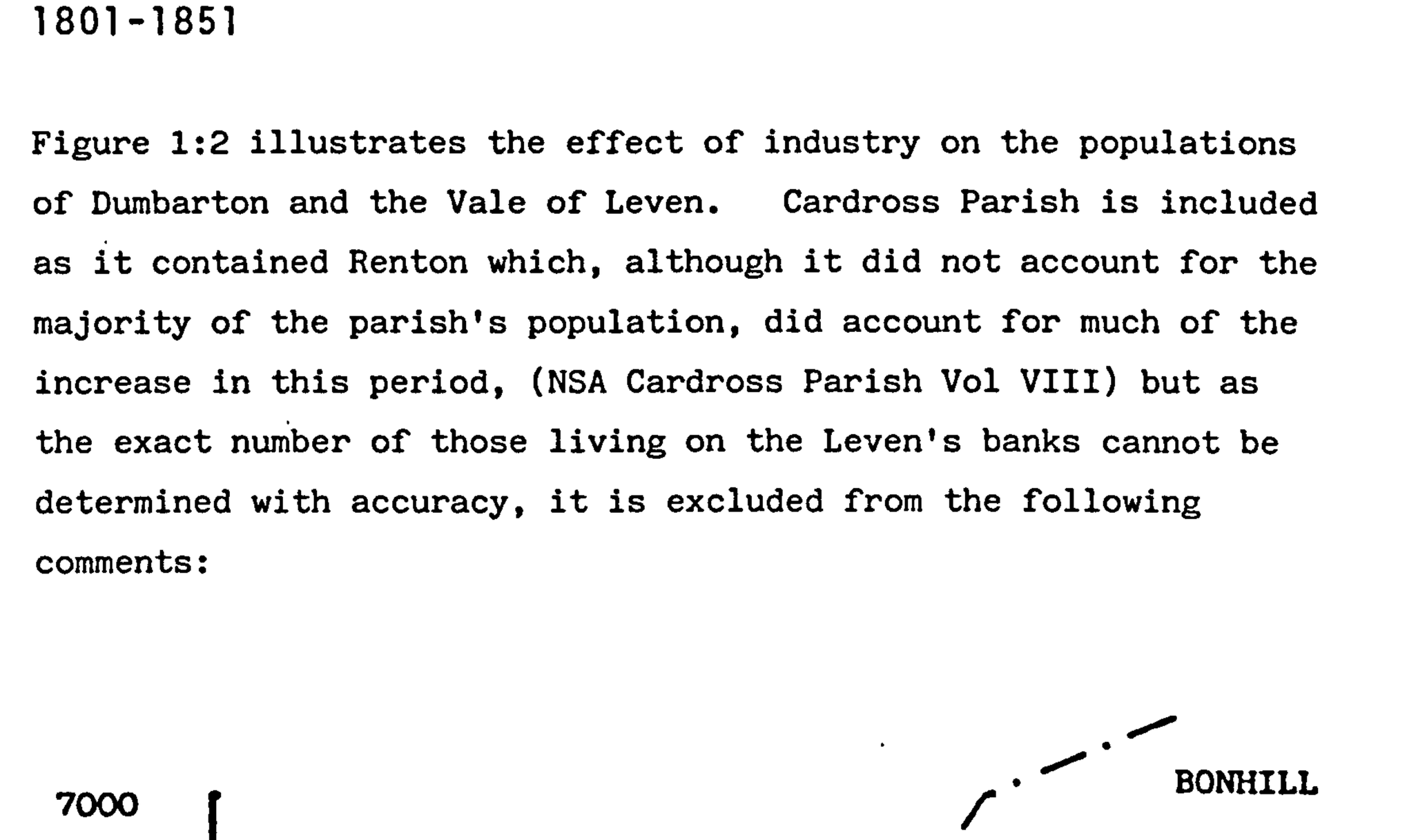


Figure 1:2 Parish Populations, Dumbarton and the Vale of Leven, 1801-1851.

Considering the population figures for Dumbarton and Bonhill parishes only, the graph (Figure 1.2), shows that while the population of Dumbarton parish grew more rapidly than that of Bonhill in the first decade of the 19th century, thereafter gains made by Bonhill were always greater. This is especially true of the period between 1831 and 1841, when Bonhill's population rose from 3874 to 6916, a rise of 3045, compared to Dumbarton's increase in the same period of 768, (from 3623 to 4391). This rise is directly attributable to the consolidation of the textile finishing industries and especially the establishment of all year round employment at the works. In contrast, shipbuilding in Dumbarton had only begun to make its presence felt, and it was not until 1871 that the population of Dumbarton parish exceeded that of Bonhill. Employment statistics from the Census Reports help to confirm industry's essential powers of attraction. By 1851 the number of people employed in shipbuilding in Dunbarton county was only 265, while those employed in cotton textile work numbered 2787; figures which are reflected in the relative growth rates of either parish.

INDUSTRY AND TOWNSCAPES: DUMBARTON AND THE VALE OF LEVEN 1850-1900

In charting the performance of Scottish industry Campbell (1980) draws the distinction between the contrasting fortunes of 'generalist' and 'specialist' producers. The Vale of Leven's villages were founded on the former basis and Dumbarton's prosperity, in the second half of the 19th century, depended on the latter. If this was an important dichotomy to make in Scottish terms, then it was of vital significance in this part of West Dunbartonshire where communities were so dependent on such narrow industrial bases.

INDUSTRY: THE VALE OF LEVEN

The villages of the Vale of Leven were built due to the bleach, print and dye works which had been established along the river. Given the nature of the textile industry in Scotland at this time, it was indeed unfortunate that the villages were almost totally dependent on these works (Docherty 1981).

As the 18th century ended, the industry was smoothly adapting to the use of calico made from the abundantly cheap cotton supplies available from the United States. This replaced linen, made from less reliable flax. In the first half of the 19th century there was expansion, as new processing techniques were introduced and markets opened up. By 1850, Turkey Red Dyeing, cylinder printing and the production of chemical dyes had been added to the bleaching, block and yarn printing operations carried out in the vicinity. As the factories expanded to meet demand the employment opportunities blossomed. Yet less than half a century later, amalgamations were deemed necessary to save the works from extinction and a reduction in the workforce led to an out-migration which resulted in an overall decline in the population of the Vale. Such a dramatic change in fortunes suggests an inherently unstable industry. An instability which had indeed manifested itself quite clearly during a number of identifiable crisis points, but which was also built deeply into the very structure of the industry.

The two major, and most easily identifiable, crisis points came in 1857, with the closure of the Western Bank and in the 1861 - 65 period when the American Civil War was being waged. In the former, the Western Bank, which had offered considerable financial support to cotton industrialists, collapsed. The resultant loss of confidence, perhaps for the first time, exposed the weak foundations of the Scottish textile industry. In the latter case, one of the many problems of relying on a foreign raw material was amply demonstrated when the war severely disrupted cotton supplies.

Leone Levi, writing in 1862 at the height of the conflict, showed that in 1860 the USA exported 1,115,891 lbs of cotton to Britain, but by 1862 this was down to a mere 32,000 lbs. Importers looked to Brazil, the Carribean, the Mediterranean and especially the East Indies for alternative supplies, but these could not fill the phenomenal gap left by the American producers. In 1860 of a total of 3,363,000 bales imported, the United States supplied 2,580,000 (76.7%). By 1862, the total import of bales was 1,445,000 (4.2% of the 1860 total) of that the USA supplied only 72,000 bales (4.9% of the 1862 total; 2.7% of its own 1860 contribution). It is well to note too that Levi was writing at a time when the war still had two years to run, when the Confederacy was to come under increasing pressure as Union troops pushed deeper into the cotton producing heartland.

This shortage forced the price of cotton up. Had cotton been a valuable commodity the effects on the industry would not have been so dire, but exports to India for example, which had been in excess of demand for several years were merely sustained by very low prices. India was one of the main destinations for finished goods from the Vale (Journals of A Orr Ewing & Co). The result was a depression with the attendant shedding of labour.

Tangible evidence for the slump lay in the temporary closure of Bonhill's Ferryfield Works in 1864. It re-opened after extensive renovation in 1871 (LH 24 June 1871).

Beyond these crises the industry appeared to move into a steadier phase, although the cautious tones of many (LH c 1871) suggest that even six years after the Civil War had ended confidence had yet to be restored. 'Block printing in particular was still in a depressed state, although this is understandable as mechanical printing methods had become more prevalent. This point is emphasised by Bremner (1868) who provides an excellent insight into the operations of the Dalquhurn and Cordale Works. The Dalquhurn Works dyed the cloth 'Turkey Red' and then it was transferred to Cordale to be printed. He fixes

the date of the beginning of Turkey Red Dyeing in the Vale of Leven as 1828, thus accounting for the sharp increase in population between 1831 and 1841. The cloth which was printed in these works came chiefly from Glasgow and Manchester. The Dalquhurn Works processed 18,450,000 yards (600,000 pieces) of cloth or 600,000 to 800,000 lbs per annum. Cordale printed just under half the cloth processed at Dalquhurn. In total around 1,500 people were employed, two thirds of whom in the Dalquhurn Works were women.

Employment figures from the cebs and census reports, along with the first and second editions of the Ordnance Survey show that the works continued to expand up to the last decade of the century. In that decade the Vale's cloth finishing industry, suffering from the same fundamental structural defects as the textile industry in general, encountered severe difficulties. Low wages, upon which the industry relied, were not enough to sustain profitability. Investment in machinery had been low and piecemeal. Technical advances pioneered elsewhere, and new chemical dyes which were more efficient than Turkey Red, were not taken up. The trade was adversely affected by foreign competition; especially from the USA where available cotton supplies could be processed cheaply; and from India which in producing and printing its own cotton goods, effectively shrunk a once lucrative market for the Vale's products.

Towards the end of the century, the firms of the Vale of Leven split into two groups. One group was acquired by the Manchester based Calico Printers Association, and the other group amalgamated in 1897 and became the United Turkey Red Company. The latter formation represented an attempt to resist a takeover by the former group's parent company.

Both amalgamations were attempts to offset decline, but neither was successful and the shares of the new CPA group dipped after a few months. Workforces were drastically reduced as the industry suffered a lingering terminal illness which lasted well into the middle of the 20th century.

A NOTE ON THE TOWNSCAPES OF THE VALE OF LEVEN 1850-1900

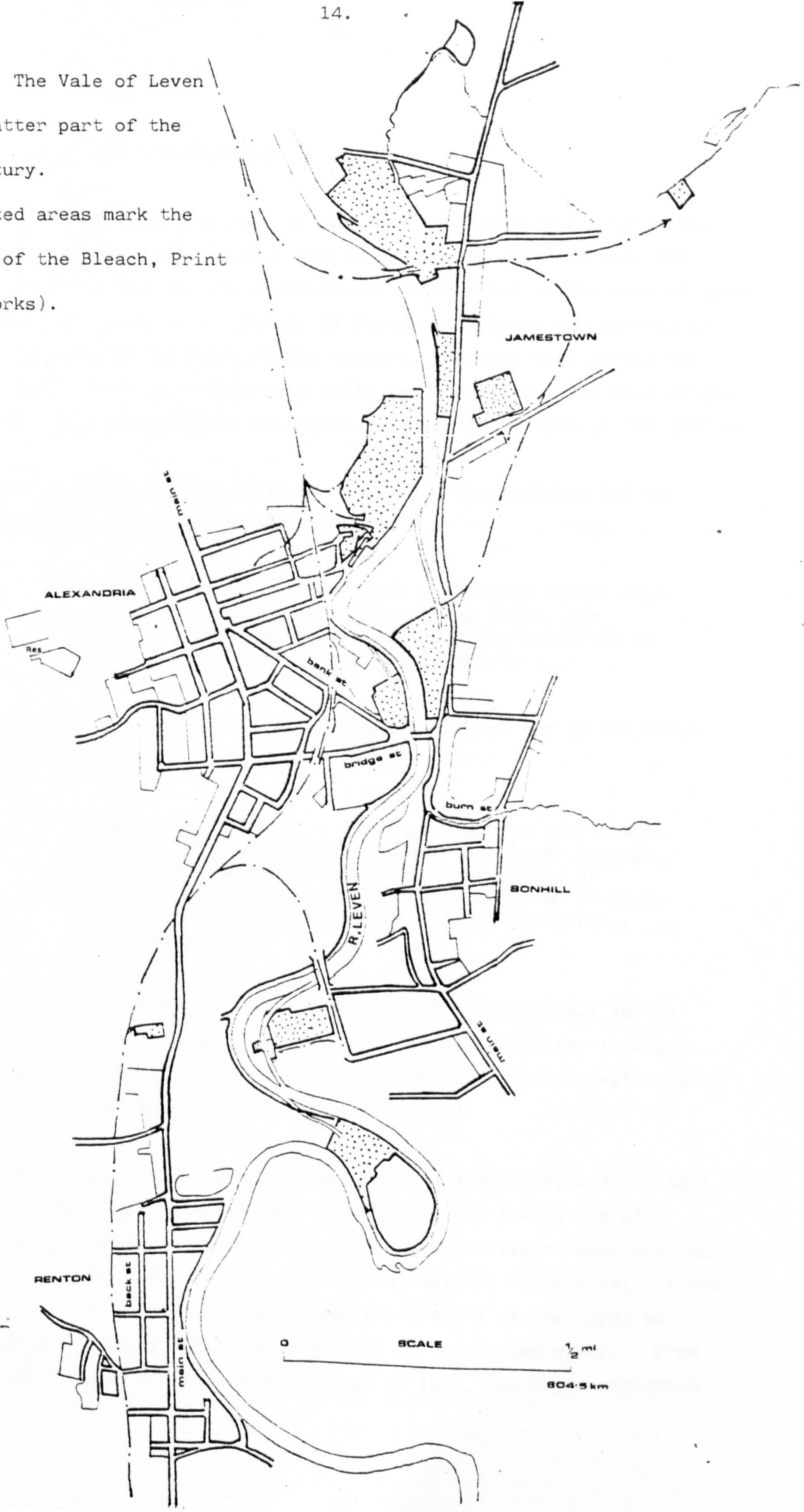
It was around 1850 coinciding with the arrival of the railway, that Alexandria became the main settlement in the Leven valley proper. Like Renton it had begun as a few streets linking the Dumbarton to Luss Road to the factories by the riverside. Both had been founded as factory colonies which were to spread up the valley side and along the main road. By 1864 and the publication of the 1st Edition of the Ordnance Survey large scale maps of the area, Alexandria had overtaken Renton in both population and physical size. Linked by bridge to Bonhill village on the east bank of the Leven, it became the shopping and service centre for the whole of the valley. Bonhill, like its west bank neighbours had grown along a main road, in this case the one linking Dumbarton to Stirling. While further north, Jamestown, a village not in evidence 23 years earlier had been built. A very basic factory village consisting of several long terraced rows and described by McLeod (1880's) as a 'model village which within our memory consisted of one or two insignificant houses only'.

It was built by Mr A Orr Ewing to house workers at his nearby Levenbank printworks (which was later to become part of the Milton Works).

By the 1890's the villages, particularly Renton and Alexandria, had experienced a good deal of expansion and in the latter, replacement of buildings in the old village core. There had even been the beginnings of a movement of people away from the town centre towards the periphery, a movement perhaps more associated with the middle decades of the present century (LH 16 May 1891). All four villages had continued their growth along predominantly north/south axes between the river and the 100 ft (30.5 m) contour, beyond which the land rose steeply. New 'plan units' (Conzen 1969) had been added to the southern ends of both Renton and Alexandria, and middle class housing was begun mainly in Alexandria, but also in the other settlements. The location of this housing is noticeably similar in each village.

Situated 'behind' the villages, that is, further away from the river, the main road, the works and working class housing. In Renton and Alexandria on the west bank these tended to lie mainly to the west and south of the village cores. In Bonhill and Jamestown on the east bank, these lay to the east and north. (See figure 1:3)

Fig 1:3 The Vale of Leven in the latter part of the 19th Century.
(The dotted areas mark the position of the Bleach, Print and Dyeworks).



INDUSTRY: DUMBARTON

The industrial situation in Dumbarton in the second half of the 19th century was steadier and is simpler to describe than the comparatively violent fluctuations experienced in the Vale of Leven. This represented a reversal of fortunes of those encountered in the first fifty years of the century. During that period the Vale's works were expanding while the Glassworks, the main single employer in Dumbarton stuttered towards its closure in the 1830's.

There can be little doubt of the impact shipbuilding had on Dumbarton as Irving (1860) writes:

> 'the foundation of the whole prosperity of the town is unquestionably the shipbuilding trade, and particularly that branch of the trade concerned in the construction of iron-steel vessels ....'

He fixes the date of shipbuilding's coming of age in the burgh as being around:

> '1844 .... when .... a change began to take place. Vessels were then built not only of larger tonnage, but as the use of iron in the construction of vessels came to be more generally known an entirely new branch of the trade took root in Dumbarton ..... (Pp 293-4)

It is no coincidence that Irving should pinpoint 1844 as the beginning of Dumbarton's industrial renaissance, for it was in that year that Denny Brothers shipyard became firmly established on the west bank of the Leven at Woodyard.

The Dennys dominated industrial life in Dumbarton, and, in this era, were possibly the most progressive and innovative of shipbuilding companies on the Clyde. The rise of shipbuilding in Dumbarton was not, of course, an isolated occurrence; it was a success paralleled the length and breadth of the Clyde as wooden sailing ships were replaced by iron steam ships. From launching 6.8% of British tonnage in 1850, the Clyde accounted

for 70% by 1870. The average annual tonnage launched on the Clyde between 1871 and 1874 was 250,000 tons. The Clyde still led Britain's shipbuilding industry with an average annual launching of 565,000 tons in the 1909 to 1913 period. (Slaven 1975, Chapters 5 and 7).

Denny's meanwhile maintained their position in the vanguard of Scottish shipbuilding by being the first firm to construct a steam vessel built of mild steel, (the Rotomahana built in 1879). While providing stark contrast to the problems being encountered a few kilometres away in the bleachfields and dye works, the shipbuilding industry was not invulnerable to the depression caused by the Western Bank failure in 1857 (Irving 1860). Nor, was it spared unprofitable contracts. Denny's shipbuilders fit R H Campbell's category of a 'specialist' industry every bit as much as the Vale's works fitted his definition of a 'generalist' producer. As was the case in a great many instances, commonplace success in the former can be viewed alongside the obvious difficulties of the latter as the century wore on.

Campbell does, however, suggest that the indicators of economic decline were to be seen, albeit faintly, as early as 1890's.

> 'Denny's were amongst the most progressive firms in accepting and developing the latest technology ....
>
> The firm's record of contracts over the forty years before 1914 is of almost unqualified profits earned, but there is a qualification which indicates the appearance of problems before 1914 ....
>
> From ship 170 launched in 1874 to ship 1007 launched in 1913, only 73 were recorded as leading to unprofitable contracts. In many cases the amount of the loss was small and the aggregate over the forty years before 1914 was only £226,609, but the distribution of the loss is more important. The incidence increased in the later 1890's and became even more frequent in the twentieth century'. (Campbell 1980 P 64)

Problems did perhaps begin as early as the 1890's but for the purposes of this study, where the occupational, social and migratory trends for the population are examined from the 1861

through to the 1891 census, it is fairly safe to state that in this period Denny's was a successful, profitable and attractive firm.

Denny's was not the only shipbuilding firm in Dumbarton at this time, although its primacy was unchallenged. Other firms included MacMillan's and A Denny's [5].

The agglomeration of ancillary industries which had clustered around the shipyards was very important in bolstering the burgh's economic well being. Included as such were engine-works, foundries and forges. The most enduring of the latter was the Dennystoun Forge established in 1854 and finally closed in 1982, long after the last ship had been launched from Denny's stocks.

A NOTE ON THE TOWNSCAPE OF DUMBARTON - 1850-1900

Prior to 1850 the necessity for urban expansion in Dumbarton was not great. Most of its people lived in the High Street, College Street (Cross Vennel), Church Street (Kirk Vennel) area. (See figure 1:4). As the population grew the burgage plots in the old mediaeval core became choked and overcrowded; housing was required for the industrial workers who had flocked to the town.

In this instance the industrialists themselves were the agents of urban growth; the Denny's were responsible for building the first substantial planned unit in Dumbarton, which was also the beginning of Dumbarton's expansion onto the west bank of the river and into Cardross Parish.

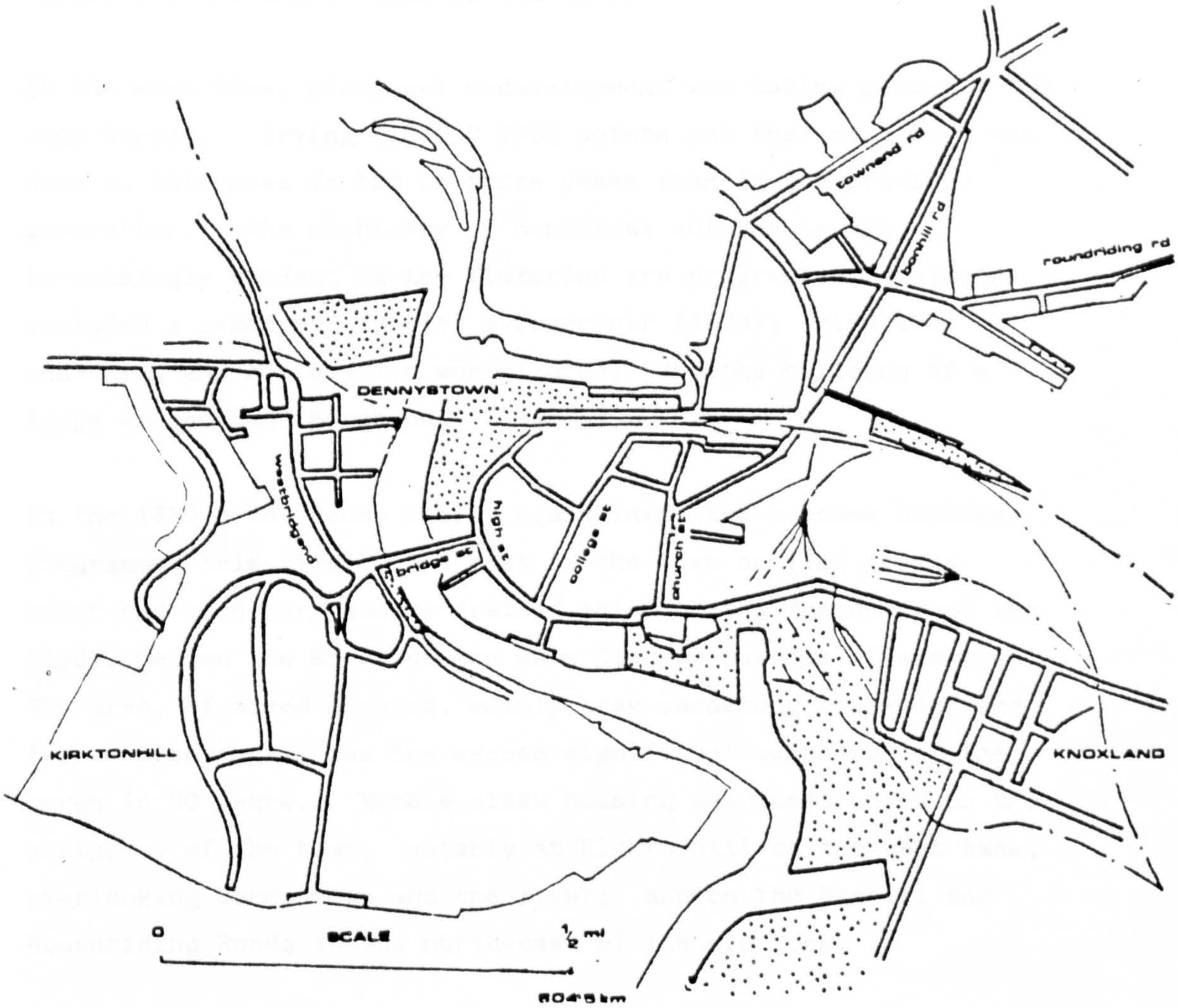


Fig 1:4 Dumbarton in the latter part of the 19th Century.
(The dotted areas mark the position of the major shipyards, foundries and engine works).

This development, Dennystown, was constructed in the 1850's to accommodate over 200 families. It consisted largely of red sandstone tenements equipped with relatively modern sanitary facilities missing in much of the town.

At the same time, piecemeal redevelopment was taking place in the High Street. Irving (1860 P 296) points out that more work was done on this area in two or three years than in the previous generation. The machinery of municipal enterprise was increasingly evident as the Victorian era progressed, projects included a cemetery (1854); a reservoir (1874); riverside embanking and reclamation work (1858); and the building of a large academy and burgh hall (1865-66).

In the 1880's the Denny family again initiated a house building programme, this time to the east of the town on flat ground which had been very poorly drained prior to the deepening of the Clyde, betwen the Rock and the main Glasgow road as it was then. The area, of mixed housing, mainly grey sandstone tenements and terraced cottages, was the second significant expansion of the burgh in 30 years. Middle class housing was constructed on the periphery of the town; notably at Kirktonhill on the west bank, overlooking Dennystown and the river; and on the Bonhill and Roundriding Roads to the north-east of the old core.

Despite (the Dennys) ambitious projects and the obvious prosperity engendered by shipbuilding, the reality of living in Dumbarton for most people meant a cramped room close to the High Street in the overcrowded heart of the burgh.

NOTES

1. Notable exceptions include the works of Lamont (1976) and Robb (1979) who both focussed on Glasgow, and Barke & Johnston (1982) who studied Falkirk.

2. A rent free period to allow the burgess time to build a tenement on his plot of land.

3. See Irving (1860).

4. It does not appear on a map of the Vale of Leven dated 1841.

5. Archibald Denny, although a relative of those running the more famous Denny firm, that of William Denny & Brothers had a distinct and separate yard, and was in no way dependent on, or linked to, the major firm. When Denny's is referred to in this text, as in most others, it is William Denny's company which is the object of discussion unless otherwise stated.

CHAPTER 2: THE PRESENT STUDY IN CONTEXT: URBANISATION AND DIFFERENTIATION

INTRODUCTION

The existence of a large bank of population census data, both in manuscript and published form, local newspapers, trade directories and rate books, parliamentary papers, bills and reports on topics such as health and housing as well as the increasing output from local authorities which were growing in stature has made the second half of the 19th century a period with wide appeal to a growing number of researchers from a range of disciplines. This attractiveness is further enhanced by the historial propinquity of the period, which in itself perhaps makes the scholar's task easier. The survival of a greater variety and bulk of documentation than from any preceding period may provice an incentive to many, but the sheer mass of data presents a problem per se. At the same time this range of material can complement and be compared to, the main sources employed in any study.

However, the period is worthy of examination other than merely for this healthy legacy. Within a fifty year span the shipbuilding industry, along with other heavy industries grew dramatically, as the textile industry tottered towards virtual extinction. Towns grew and their internal structure altered as the scale of segregation increased. The poor flocked to the inner cities as those more fortunate gravitated towards the urban periphery. Migration was heavy, particularly to these expanding towns, population mobility increased within the towns and occupations became increasingly diversified and specialised. It was thus a period of great industrial, urban and social change and upheaval. The effects on Scotland are admirably charted in works by, for example, I H Adams (1978;) R H Campbell (1965, 1980;) T C Smout (1986;) and A Slaven (1975;)

CONTRASTS IN ENGLISH AND SCOTTISH URBANISATION AND INDUSTRIALISATION

Scotland is well served by these important general works but as I D Whyte shows, the historical geography of Scotland's towns has rarely been focused upon (Whyte 1978 P9) and whilst studies of particular industries and of population change have been made (Whyte 1978 Pp 6 & 10), detailed works linking population, industry and urban growth at anything below regional or county scale are scarce despite the availability of the census enumerators' books for the whole of the country up to and including 1891 [1].

This major source has been frequently utilised for studies of English towns and cities. An argument could be levelled against the use of this source by suggesting that while this field of investigation has been poorly charted in a Scottish context, it is merely following a well trodden trail in a British context. The argument against this use would emphasise the links and similarities between Scotland and England at this time. For example, it could be postulated that the 19th century experience of industrialisation and urbanisation was essentially British and that the dichotomy was an urban/rural one, rather than one which distinguishes between countries which were economically and politically united and undergoing parallel change.

Not only is the division into urban and rural fallacious, but the conditions which prevailed in both Scotland's towns and countryside were so distinct as to merit special attention. The reverberations of industrial change affected all parts of Britain, (and the Scottish countryside played an integral part in the 'industrial revolution'). Farms became increasingly mechanised thus releasing labour from the land. Labour which was being drawn to the new factories by the promise of steady employment and an increase in real wages. The industrial revolution had its beginnings in the countryside with the utilisation of 'greenfield' moorland sites where stream water was of sufficient strength to

turn water wheels. Scotland's countryside, unlike England's, lacked a rank of market towns to assume a range of local functions and it was subject to a markedly later, but generally more intense, period of enclosure, although evidence suggests that there was not merely 'revolution' but also 'evolution' in the Scottish agricultural landscape (Caird 1980). While the rural areas around the villages of the Vale of Leven are not considered in detail in this thesis, they did provide a large number of short distance migrants to fill the growing number of jobs available in industry.

Further contrasts are to be found in the size and composition of migrant groups. The population of Scotland in the second half of the 19th century was but a tenth of that of England and Wales, heavy immigration ensured that Irish immigrants made up a greater and more enduring proportion of the Scottish population than they did south of the border. If it is accepted that the size of a migrant stream has some effect upon the assimilation of those migrants to the indigenous population, then it follows that this process, which has not enjoyed the focus that it should have even in English studies, may have taken on a unique form in Scotland's towns and cities. If physical segregation of ethnic groups is admitted as an indicator of cultural distinctiveness, notwithstanding the need to take account of other factors, such as poverty which inhibit mobility, then the historical geographers who have been involved in exhaustive debate over the extent and nature of residential segregation would do well to draw some empirical evidence from Scotland. They would not only find differences in the compositions of the migrant streams, but would find too that the spatial framework of the cities within which these people lived was different. Important contrasts in English and Scots tenurial law, particularly with respect to feu duties, ensured that Scottish land was priced higher, and, as real wages were lower here, overcrowding was much more severe. For example, one and two roomed housing in Scotland was much more prevalent than in England and Wales, with 49.6% of Scots but only 7.1% of the English and Welsh living in such dwellings at the time of the 1911 census (Rodger 1981).

Much of the overcrowding was also due to heavy in-migration which was a key factor in the peopling of Scotland's towns and factories. An understanding of the migration processes which affected Dumbarton and the Vale of Leven and their wider implications for the West of Scotland and the country as a whole, are fundamental considerations in this thesis.

RESIDENTIAL SEGREGATION

The greater proportion of English studies have centred on 'moderate sized towns like Exeter, Norwich and Peterborough' (Dyos 1968 P44), though since those words were written, Professor R Lawton and C G Pooley have thoroughly investigated the social geography of 19th century Liverpool. The major pre-occupation of these studies has been the transition from the pre-industrial to the industrial town as manifested in the growing residential segregation of people of different social status, and especially to the extent that differentiation within the 'working class' was taking place.

In other words:

> 'It is frequently argued that the 19th century witnessed a transition from the form of the pre-industrial city described by Sjoberg to the ecological city of Burgess'. (Dennis & Clout 1980 P62)

The modern, segregated city is one where socio-economic, family and ethnic status comprise the main axes of differentiation according to Shevky and Bell (1955). Factor analysis, a statistically sophisticated and computer assisted technique, which allows a wide range of variables to be analysed, has been applied to the social mosaic of the city (see for example in Clark and Gleave (eds) 1973). This method, its proponents argue, is free from the subjectivity of the pioneering work of the Social Area Analysis School and yet its use has, in general, merely re-affirmed the findings of that school, as Shaw (1977) and Pooley (1979 a) point out. Robson (1969) and Dennis (1982)

qualify this by suggesting that British cities do not fit the Shevky-Bell model as well as the sprawling North American cities. This is probably due to contrasting housing conditions, in for example the tenure system and the post World War One involvement of the local authority in British, and more especially Scottish housing.

How, why and when cities and towns took on a 'modern' structure has been the subject of much research and debate, argument over the timing of their transition from a pre-industrial to a modern structure overshadowing the more important aspects of the mechanics of that change. This fault, Dennis (1982) believes, arises mainly from an intense concern with the quantitative methodology involved in such investigation instead of with the subject matter under scrutiny.

C G Pooley (1979 a) states that residential differentiation was the result of 'varying migrant, socio-economic and occupational characteristics' (P161) and that the reasons for the segregation lay mainly with limiting factors such as economic ones, which affected the housing and labour markets; religous and cultural factors; and occupational factors, which may have necessitated a short journey to work. In carrying out a principal components (factor) analysis of 35 variables gleaned mainly from the cebs he found that, at his aggregate scale of analysis, residential areas with distinct characteristics were to be found in mid 19th century Liverpool. Thus, he argues that instead of stressing the transitional nature of the Victorian town we should stress its similarities to the 20th century town, making the same point as Robson (1966) that many theories about urban form are based on research carried out and ideas formulated in the first decades of the 20th century [2].

It is also worthwhile taking into account the Victorian people's own perception of their towns. It is unlikely, as Dennis and Clout (1980) point out, that they thought of their towns as transitional, and yet that fact alone cannot wholly dominate our

judgements of them. Rather as Cannadine (1982) suggests both 'objective' and 'subjective' (contemporary) images of residential differentiation exist. It is his contention that this differentiation was perceived more vividly by Victorian commentators than we can find hard evidence for today.

Shaw (1977) tried to incorporate a stage model approach to urban history with a factorial analysis of Wolverhampton, 1851 to 1871. He suggested that industrialisation led to an increase in the scale of production which, in turn, led to increased residential segregation. Evidence was produced to show that a temporal evolution in the dimension of residential differentiation had occurred in an area which had all the characteristics of a new immigrant community in 1851, but which had by 1871 moved closer to a 'general social status axis' [3] (P343) as a gradual dissociation of socio-economic and family status components into independent axes was taking place. He did however, underline the need for research over a longer time period.

Jackson (1981) compared Wigan and St Helen's for 1871 to discover whether "working class' housing areas were still influenced more by place of work ties than by social status ones. Using rate books and building registers, along with census material for both towns, he concluded that in St Helen's 'working class' residential areas had developed along social status lines by 1871. Evidence for Wigan was:

> 'far less certain given the size of the statistical units used and divisions along occupational and overt ethnic lines are more apparent' (P413).

The differences he attributes to contrasting housing developments, where employers, by building good working class housing, speeded up the rate of social area change, and to contrasts in morphology, population growth and industrial structure (particularly its state of technical development and its dependence on skilled labour).

Barke (1976) used the cebs to examine the population of Brighouse in 1851 with the intention of seeing how changing industrial locations within the town had affected the population structure. He found that higher status groups were not located in the peripheral 'rurban' fringe areas. Drawing comparisons with the Sjoberg model of a pre-industrial city, he contrasted his findings with those of Lawton (1972) who had discerned 'middle-class' decentralisation in the evolving fabric of Liverpool.

Warnes (1973) in studying Chorley was fortunate in having the results of the Vestrey Committee Survey of 1816 to compare to the 1851 cebs. Using factor analysis he found that, at the earlier date, the dominant determinant of residential location was the place of work. By 1851 a socio-economic status component was beginning to emerge, but it was not entirely independent of occupation. The social class distribution found in Chorley did not conform to any existing model of town structure. Industrial change, including the size of factories and the hours of work, along with wealth, family structure and transport changes were seen as greatly contributing to the growing segregation of social status groups. These findings, he concludes, suggest that, as the socio-economic, family and ethnic factors were not fully independent, it is only in the most modern of societies that this occurs. This statement concurs with Ward's ideas of social differentiation and the modernity of cities which are discussed below.

Ward (1975) in contrast to Lawton and Pooley (1975) believes that even in large cities the social differentiation to be found by the mid 19th century was not identical to that found in those cities at the turn of the 20th century. Differentiation at the modern level, he claims, was weakly developed in the Victorian cities. As such Engels and his contemporaries, while observing the 'dichotomous class division' and understanding its implications, in Ward's view, failed to take account of division within the 'working class', the level of which was still in a 'transitional' state. He concludes that the term 'modern' could only be applied to cities by the late 19th century (P151).

The researchers quoted above have examined residential segregation (differentiation) by looking at a town or city at two points in time (Pooley 1979 a; Shaw 1977 and Warnes 1973), by comparing more than one town at a particular point in time (Jackson 1981) or by examining how the changing industrial fortunes of one town, made up of distinct nuclei of population, led to differences in the population structures of these nuclei at a fixed point in time (Barke 1976). In the present study, it is hoped to combine such approaches by comparing Dumbarton and the Vale of Leven's villages through both space and time in relation to contrasting industrial histories. This study, like those mentioned earlier, is empirical and draws heavily from the cebs. However, the ability to contribute to the development of historical urban theory is an integral aim.

Perhaps, the lack of an overall perspective has led to the many seemingly contradictory conclusions reached by those involved in explaining the urban structure of 19th century society. Part of the reason for such variation in results is obvious, simply that towns and cities have had unique social and industrial experiences. There is little sense in constantly referring to the 'Victorian City' when these cities experienced processes of change which themselves varied in character, through time, and in their social and structural impact upon towns.

The size of a city may also have been an important factor in forging segregated communities. The general rule would appear to be 'the larger the city, the more MODERN its structure'. (Dennis and Clout 1980 P64). Whether true or not, and the authors claim no conclusive proof, it is not a causal inference. In the 19th century an expanding town was often the result of industrial growth and it may be that the development of factory industry, that is Shaw's 'increase in the scale of production' (1977 P334) plays a crucial role in social status segregation. This is a view with which Pooley (1982) concurs and he presents a contrast in differentiation between the town which rapidly industrialised and grew in the early decades of the 19th century with the smaller town where residential differentiation only developed fully over a longer period of time.

THE SCALE OF ANALYSIS IN RESIDENTIAL SEGREGATION

A problem not unconnected to the size of the city is the scale at which analysis takes place. It is conceivable that segregation is only recorded when aggregate analysis is carried out on a city with relatively large 'segregated' or 'differentiated' areas, and that a finer mesh of sampling would be required to isolate complex social patterns which exist at a smaller scale. Pooley (1979 a) suggests that the whole argument over whether the Victorian city is modern or transitional is largely due to the way in which the data is handled, for example, in ignoring small areas at street or block level and concentrating on census or enumeration districts (Eds). There is here of course the practical difficulty of the lack of precise address information. For example, in the present study over 140 people are registered as living at 144 High Street, Dumbarton in 1861, while others in Alexandria in 1851 are described as living in 'Main Street, Smollett's Land'. The large number, in the former case, is due to burgage plot repletion and the multiplicity of back land structures erected in these long tails of land. In the latter case, the Smolletts were one of the major landowners in the Vale of Leven and the family held property at a number of locations in Main Street, Alexandria, as well as in other settled areas. Warnes (1973) found great difficulty in analysing his data at a scale lower than street size because of this problem. Shaw (1977) quotes Openshaw (1973) in showing that differences in the areal units used when examining the same set of data can produce significant differences in results. Jackson (1981) admitted that social area divisions may have existed at a smaller scale than those which he managed to isolate in his study. Gordon and Robb (1981) were critical of Lamont (1976) and others, for their failure to take proper account of differences at a micro-scale, for example within a street, block or 'close'. Crucially Dennis (1977) has stated that the city did not suddenly become segregated in the 19th century but that the scale of segregation grew larger and therefore became more apparent.

To counter just such problems Lawton (1979 P207) suggests in population mobility studies:

> 'a range of scales from micro-level using aggregate census and registration data, to micro-level using information on individual mobility and characteristics (is necessary)'.

It is desirable, therefore, that a range of scales and different sampling techniques should be used within the present study. Certain streets, parts of streets or individual tenements may require greater attention than others in, for example, a study of immigrant groups, while interest in the general residential evolution of towns may necessitate a wider sampling mesh. The pitfalls and problems of the scale of analysis must be recognised if meaningful results are to be extracted.

Another serious problem which has caused analyses to lack comparability has been the way in which different social status groups have been defined. For example, if one researcher chooses to categorise two occupational [4] groups A and B as being in an unskilled workers category while another regards A as being in the unskilled category but sees B as being a semi-skilled occupation, then if groups A and B are found to be highly assimilated, the first researcher could use this as the basis for suggesting that the city was beginning to take on a 'modern' appearance with large homogenous social areas in existence.

The second researcher would feel that as these groups, belonging to separate categories in his eyes, were as yet unsegregated that the city was at an earlier stage in its development. This admittedly extreme example serves to illustrate the need for comparability of results. To this end Armstrong (1968 & 1972) has suggested the use of the Registrar General's social classification scheme of 1951, with some minor adjustments. In general this scheme has been adopted by most researchers, although alternatives have been suggested by Lobban (1969), Royle (1977), Robb (1979), Cowlard (1979) and McLaughlin (1981) [5] and Anderson (1972).

The urban geographer's research into residential segregation in the 19th century has tended to focus on the emergence of the 'modern' town. Dennis (1982) states that, in this pursuit, they have fixed on one of three main ideas:

a. The reversal of spatial patterns of socio-economic status

b. An increase in the scale of residential segregation

c. A separation of axes of socio-economic, ethnic and family status (P254)

There remain serious problems both in the definition of social status groups and consequently in any analysis of their spatial distribution. Indeed, even if social classification schemes and scales of analysis can be agreed upon, there is no guarantee that there will be an agreement in interpretation as Cannadine (1982) has shown that no coherent body of theory concerning the links between spatial segregation and social class exists. Particular concern has been voiced over the use of factor analysis, notably by Johnston (1971). Robb (1979) dismissed the method as ahistoric, and while this is no reason for not employing the technique, Robb (1983) himself, has demonstrated the worth of using a fine sampling mesh. His thesis also illustrates the unfortunate concomitant of a small sampling interval: that of the severe areal limits imposed, even in such an exhaustive study as his.

It is thus tempting to conclude that many of the obsessions of the past decade have provided a solid foundation which requires building upon. Descriptions of residential distribution whether 'snapshot' descriptions of fixed points in time or those of 'emerging' structures are not enough. Attention must now be focused upon the reasons for the change in residential patterns and the processes which caused these changes to take place in the way they did.

NOTES

1. The hundred year confidentiality rule which exists in England and Wales does not apply to Scotland, although the 1891 data is the latest to be available here. It would appear that the next release (of the 1901 data) will not take place until 2001, thus allowing the Scottish procedure to fall into line with that of England and Wales.

2. Principally by the Chicago School of Park, Burgess et al.

3. It should be noted here that immigrant segregation is an enduring feature of all cities and this in itself does not influence the argument over the locational differentiation of various social status groups.

4. If it can be assumed that occupation is the best available determinant of social status.

5. Unpublished seminar paper given to Department of Geography Staff/Research Student Group, University of Glasgow.

CHAPTER 3: THE PRESENT STUDY IN CONTEXT: MIGRATION

INTRODUCTION

If the evolution of large scale residential differentiation has been a major pre-occupation of urban theorists, it has perhaps served to show that each town has a uniqueness in terms of history, industrial growth, social development, transport, housing and population movements. Changes in these factors and in their inter-relationships with each other varied from town to town, although the general trend of the increasing scale of differentiation continued at varying pace and in different ways in each town. In determining that the residential make-up of towns did change in the 19th century, attention is focused centrally on the major processes fashioning this change and particularly on population movements triggered off by changes taking place in both town and countryside. Migration to towns contributed greatly to their growth in this period and mobility within towns resulted in a changing internal structure.

As the old residential links which had tied master, journeyman, apprentice and labourer to the workshop began to break down with the increase in scale of manufacturing and transport improvements, the scale of residential differentiation grew. Discernable 'working class' areas developed in the inner cities, around large factories and along the transport routes which had attracted them. Migrants flocked to these areas as the demand for labour increased.

The 'middle classes' in exploiting or encouraging improved transport networks and repelled by the decay, overcrowding and squalor of the inner city left this once advantageous location for the suburbs.

Population movement occurs at many different scales, in both the number of people involved and the distance travelled; that is from the movement of a single person to that of a whole ethnic group and from intra-urban movement to inter-continental migration.

This study is concerned with migration at several scales. The movement of the Irish and Highland Scots and their locations in the towns and villages of the Leven Valley; the receptiveness of the immigrants from nearby counties to industrial conditions and their contribution to the peopling of the area; intra-urban movement as well as inter-urban movement along the Valley are also considered. It would be unwise, however, to concentrate solely on the above. General migration theory must be considered, as must the broader picture of population movements from Ireland and within Scotland in the 19th century. Such issues help to place the greater part of this thesis in context. Hopefully studies of the present type, focusing on specific communities, will in turn enrich general theory by confirming, or even contradicting it. For just as this research must be set beside what is known about regional or national migration, so concern solely with macro-scale migration may blur the complexity and intricacy of migration on a smaller scale. Concern with the general needs to be balanced by attention to the particular and vice-versa.

GENERAL MIGRATION AND ASSIMILATION THEORIES

Broad, and essentially sociological works on migration have been edited by Jackson (1969) and Jansen (1970), but by far the most enduring pieces on the British migration experience were produced by Ravenstein (1885 & 1889) when he put forward certain 'laws' of migration. Although it is fortunate that his writing was contemporaneous with the period under scrutiny here, many of his pronouncements were universal in neither time nor space. His influence, nonetheless, remains strong in even the most recent writings and in hypothesizing upon the effects of age, sex, urbanisation and industry, for example, he has opened up important avenues of investigation for his successors to follow.

Jansen (1970) discusses such subsequent work, like Bogue's contention at the 1961 Population Conference that the only 'universal' law of migration is one which states that young adults

are the most liable to migrate. Jansen saw the direction of his work as concentrating on:

a. 'Principles' (as opposed to the more emphatic 'laws') of selectivity as influenced by environmental and population conditions at the places of origin and destination;

and

b. Motivation which might be inferred by studying the characteristics of migrant streams (although little will be known about individual motivation).

As a geographer it is perhaps more important to ackowledge that migration streams are made up of people who have made individual decisions to migrate for a variety of personal reasons, than to undertake a study of these singular motives. The attention of the geographer should be upon the areal ramifications of migration, in which he will take account of environmental, social and economic conditions at the places of departure and destination.

Models of migration and broad descriptive categorisation of migrants are therefore of importance. For instance George (1970) divides present day migration into two major categories, either an 'exodus' or an 'economic' migration (P41). Lee (1969) presents a theory of migration where the factors acting to produce migration are seen as being associated with:

a. the area of origin;

b. the area of destination;

c. intervening obstacles;

d. personal factors.

The effects of these factors upon the volume of migration and the characteristics of the migrants are subsequently examined.

Peterson (1970) attempted to set up 'a general typology' of migration' and in so doing criticised many of the subjective misconceptions attached to the philosophy of migration, among which were flaws in the logic of previous typologies and in the criteria involved. Most successfuly he has shown that the notion of man as being sedentary until he is 'pulled' or 'pushed' is as logical as suggesting that man is a continually wandering species. Consequently his definition is that:

> 'a social group at rest, or a social group in motion (eg nomads) tends to remain so unless impelled to change' (P52).

He then delimits five main classes of migration viz:

i.	Primitive	iv.	Free
ii.	Forced	v.	Mass
iii.	Impelled		(P54)

In a summary table these classes are matrixed with factors such as the migratory force involved and the 'type' of migration, whether conservative, (to try to retain what the migrants have had in the place of origin) or innovating (where there is an attempt to change status). In laying down such a typology Peterson is attempting to provide a foundation for the development and sophistication of theory. Such a pre-existing framework helps the researcher to order his thoughts without stifling the ability to search out new theories of make new observations.

Migration studies must consider the combination of social, economic and environmental factors which stimulate movement. If differential migration has taken place whether by age, sex religion or socio-economic status, an attempt at explaining the bias must be offered. Attention must be paid to counter-streams of migrants, and the changing nature of migrant streams through time (as espoused by Jansen (1970)) that is, from initial pioneering movement to wholesale, almost commonplace movement of families.

Other areas in need of examination include the scale of migration, in terms of both distance and numbers of people, as stated earlier, and the assimilation of migrant groups within the host community. Rose (1970) for example examined socio-economic status differentials and the distances of migrations within the USA. He found that, apart from poor negroes from the south living in northern cities, the general rule was that higher status persons would move further to find opportunities for advancement. The number of migrants settling in a town or country and their assimilation (that is how well they interact with, and fit in to the receiving population) are often linked. The accepted view, that a growth in migrant numbers causes integration to become slower, has been challenged by Price (1969). He points to small groups which may feel insecure and, in starting to engage in anti-social activities, arouse the ire of the indigenous population.

Pooley (1977) examined the degree of segregation of migrant communities, and discussed the differences between the free choice of ethnic groups in staying together as compared to cases where ethnicity, combined with a lack of social mobility, leads to the ghetto. He sees the process mainly in socio-demographic and cultural terms, that is, when an immigrant group has a similar socio-demographic and cultural background to the host community, integration will be total and rapid; where these factors are radically different from those of the hosts and when the immigrants' socio-economic status is lower, a ghetto forms; where the culture is different but the socio-demographic features of migrant and receiving community are similar an 'ethnic community' may form. Perhaps a flaw in his assimilation model, which he presents in graph form as a product of these two variables, is the absence of a dimension which would consider the effects of the size of a migrant stream upon the intermingling process. However the distinction which he draws is an important one, for it implies too, basic differences in the formative processes involved in social area evolution associated with these two groupings. Ghetto formation in cities is most often the result of residualisation

where the more affluent gradually abandon a district which is in turn slowly permeated by the immigrant group. Ethnic communities, where these form at all, involve more choice and are the result of colonisation.

Lobban (1969) has also passed comment on migrant/native interaction in Greenock, though generally this topic has been neglected, particularly with respect to the effects of the ratio of immigrants to natives. Conditions within the receiving society are also crucial, as are the circumstances which led to, and therefore influenced the type of migration affected. The unfortunate but almost universal sociological trait where even small culturally distinct groups are discriminated against, cannot be ignored. Discrimination fuels the fire of isolationism and assimilation is made more difficult and probably less desirable from the in-migrants perspective.

SCOTTISH INTERNAL MIGRATION AND IRISH IMMIGRATION

To place the study of Dumbarton and the Vale of Leven in perspective the experience of this historically and industrially diverse sub-region must be viewed within the wider context of the three main strands of West Central Scottish migration at this time. Thse were the movements of the lowland Scots, the Highlanders and the Irish. The movements within Scotland have been recorded by Flinn (1977); McDonald (1937); Osborne (1958) and Handley (1964) for example, who provide broad social and economic motives for the movements. This wealth of scholarship does not preclude case studies which might help to clarify issues such as when Highland emigration slowed down; the regional differences in Highland out-movement to particular areas; the neglected topic of Lowland, short-distance movement; and migration between towns of similar and dissimilar industrial structures. Regional variations in the proportion of an immigrant population present, the occupation which they follow and the specific locations of their residences are lines of

enquiry which could be pursued, not only for the Irish immigrants but for Highland and Lowland Scots too. In spite of the small geographical area covered in this present work, exceptions to, as well as confirmation of, the general trends may be highlighted and comparisons with other areas which have been studied in depth will also be possible.

Regional variations in emigration from Ireland are well documented, for periods before, during and after the Great Famine, by Cousens (1960, 1961 & 1965) who used census reports and other sources such as passenger lists on outgoing ships, although his interpretation has been challenged by O'Grada (1977) who believes that emigration from the West of Ireland was of a greater magnitude than Cousens has demonstrated. The pre-cursor of permanent immigration to Scotland, that is the temporary 'harvest' migration of Irish workers is described by Johnson (1967). Unfortunately while spatial variations in origin can be isolated for those leaving Ireland, in most cases when these people arrive in Britain their country of birth is not identified in cebs. The county and parish of birth was asked in Scotland only of the Scots themselves. However in some cases the county or origin of Irish born people is recorded, so whenever an enumerator has followed this practice the information can be utilised if one is mindful of the dangers of extrapolating about the whole settlement from one or two enumerators' books.

The presence of the Irish in British cities and their tendency to cluster in the poorest areas has been noted for example, by Lawton and Pooley for Liverpool (1975) and by Richardson (1968) for Bradford. Lawton (1959) examined Irish immigration to England and Wales in terms of:

a. its general features;

b. its importance to Britain and in particular to England and Wales;

c. the Irish community in Liverpool in 1851.

He delimited the numbers of Irish at both county level and with reference to Liverpool. The build up of the Irish population in that city was considered as well as spatial settlement patterns for 1851 and their occupations. He was limited by the 'hundred years rule' which did not allow him to carry the work through to later census years although he has in part, returned to this theme in later works cited in the bibliography.

There is no reason to suppose that Irish communities in Britain were all fairly similar in terms of the regional origins of their immigrant stock. Indeed evidence suggests, both from general migration theory and from the work of Handley (1964) on the Irish in Scotland, that concentrations from one distinct region may have been found within certain towns and cities. Migration from Ulster and Donegal into Western Scotland was especially heavy, and this had an important influence on the social geography of Scotland which still has its echoes in the region today.

It is important to realise that in other ways the Scottish experience of Irish immigration was also markedly different from that of England and Wales. Migrants came in fewer numbers to Scotland than to the rest of the mainland, but they made up a greater proportion of the population of the West of Scotland's towns over a longer period than was the case in the south. Scottish towns also had the distinctive Highland element missing in England. Yet this separate experience of Scottish industrial communities has been sparsely recorded. Gibb (1983) in a wide ranging work on Glasgow, recorded the migrant influx, their distribution, living conditions and their contribution to the growth of the city, and Lamont (1976) studied their movements predominantly within the central area of that city in a multivariate factorial analysis of the 1871-91 period. Lobban (1969) studied the Highland migrant streams which converged on Greenock in the 18th and 19th centuries and followed this up by writing on the contrasting experiences of the Irish migrants to that town (1971). Lockhart (1980 & 1982) has studied migration to Scottish planned villages, with special reference to north-east Scotland. His contention, 'after tentative research', that

a short-distance migration pattern which almost totally dominated the structure of movement in the north-east was generally replicated in the West of Scotland (1982) may not be fully borne out by this present work.

The last three named authors used an interesting and contrasting variety of source material. The census enumerators' books were prominent but Lockhart and Lobban, who were dealing with a period which stretched back beyond 1841, used such sources as the Register of Sasines and Parochial registers. The latter also employed indirect methods of monitoring Highland in-movement, such as recording Highland names and examining the origins of the 'buss crews' sailing from Greenock and recorded in customs accounts and marriage registers where the residence of fathers of girls being married in the town were recorded. Lobban investigated such traits as the pattern of migration into Greenock; occupations followed by the Highlanders and Irish; assimilation and social mobility of migrant groups; and the impact of, and reaction to, these outsiders. These lines of inquiry are vital to this present study, but there is also concentration upon the spatial dynamics of in and out migration, as well as on internal migration, with reference to occupation, social status and the origins of the population. Emphasis is placed on the effects of the fluctuating fortunes of industry upon patterns of movement.

In most cases in Britian, excluding those towns which had a market or administrative function, urbanisation was the direct result of industrialisation. Lobban's contention that small towns like Ardrishaig, Tarbet and Lochgilphead were attracting rural migrants and then channelling them to Greenock and other Lowland towns is concurrent with the theories of 'step-wise' migration whereby people, through a series of small moves, gravitate towards a large town or city. Thus, he suggests, that while the presence of big towns may have slowed down the out-migration process in the Highlands the:

> 'commonly held belief that one of the factors causing Highland depopulation has been the lack of towns to act as plugs and stoppers to the people coming in from the countryside .... on the contrary, it would appear that these small towns acted as relay stations' (P92).

This misses the point, which must be that these small regional centres may have provided some jobs in the fishing and textile industries, and indeed as a result towns like Wick and Stornoway actually grew in population over the second half of the nineteenth century. However in the absence of large-scale industrial agglomerations most Highland towns could not sustain growth. The failure of the Highlands to have any advantages to offer such development meant that the dominant direction of out-migration caused by the changes in Highland society was towards the employment available in the new industries of the Central belt. The relationship between industrialisation, urbanisation and migration is obviously one which merits careful scrutiny. In an earlier work (1982) this writer has suggested that, in the absence of alternative employment, migration cycles quite naturally were in concert with and tied to the fortunes of industry, in that case, the textile finishing industry of the Vale of Leven.

POPULATION MOBILITY WITHIN AND MIGRATION TO SETTLEMENTS

For those concerned mainly with the evolution of differentiation within towns, a study of intra-urban mobility would be the logical next step in attempting to explain the emergence of 'modern' social areas. Surprisingly, the number of people working on this topic is smaller than those involved in the study of residential segregation. It is possible that difficulties of the type described below have deterred would-be researchers in this field.

Dennis (1977) attempted to trace population movements in 19th century Huddersfield. He took the south west sector of the town as his focus principally because its enumeration districts had changed little over time. Taking heads of households with initials A to H from the cebs he tried to trace these individuals forward from 1851 to 1861 and back from 1861 to 1851. In each case he began with the heads in the south west

sector, but extended the search to the whole of Huddersfield for the subsequent census. In both cases non-heads were checked, for example in 1851 some 1861 heads would be as yet unmarried, and perhaps some former 1851 heads would be living with grown up children by 1861. Primarily a combination of ages, names and family structure was used to locate people. The findings fell into three categories:

i. persons traced to the same enumeration district (not necessarily to the same address) ie 'stayers'

ii. persons traced to another district both within the initial sample area and the rest of Huddersfield ie 'movers'

iii. persons untraced or 'lost'

> 'failure to identify an 1851 head in the following census denoted either death, out-migration or errors in enumeration or record linkage .... untraced migrants working back from 1861 to 1851 were either in-migrants or errors' (P352).

The data was then analysed in terms of the birth places and ages of those who had moved. For instance he found that, in tracing from 1851 to 1861 more non-Yorkshire born heads were 'lost' than Yorkshire born. He also confirmed the mobility of young people, and analysed distance-decay patterns of 'stayers' and 'movers'. The scale of movement was compared for different occupations and for those at different stages in the life cycle. This is an important work, more for the problems which were encountered in the methods used, than for the actual results. There was a problem here with the scale of analysis. The 'mesh' was of enumeration district size and, as Dennis points out, many regarded as 'stayers' could have moved further within an enumeration district than some classified as 'movers' who may have moved a short distance between adjacent enumeration districts.

The use of census enumeration books which are completed only once every decade, determine that many inter-censal moves cannot be followed. The most serious deficiency was the enormous amount of

work involved in a record linkage which managed to trace only a small number of the base population. In this case the population of the south west sector of the town rose from 14,442 in 1851 to 16,746 in 1861. In limiting the search to heads of households with surnames beginning A to H he was left with 1250 male heads in 1851 and 1449 heads in 1861. Forty-two percent were untraced from 1851 to 1861 and 30% were lost between 1861 and 1851.

The extent of the research needed to trace even such a small number of people is emphasised by Pooley (1979 b) who examined thirty Liverpool streets chosen to represent a broad cross-section of social areas. Using census and directory sources, he traced households in two separate decades (1851 to 1861 and 1871 to 1881). Of the 2446 households, 17.8% persisted at the same address; 27.8% were traced through at least one other address; but 54.3% were lost due to mortality, movements out of the city or an inability to trace them in the directories. He assumed an adult mortality rate of 25% per decade leaving about 29% of the sample, which from census and other statistics he divided among 8% (of the original total) who were reckoned to have left the city and 18.2% still unaccounted for, in spite of having annual or biennial directories to work from. In drawing from this and other work, he concluded that mobility was high in all sectors of society; most intra-urban movement was short-distanced and area specific; and there were important differentials in mobility with respect to age, life-cycle stage, birthplace, socio-economic status, and housing tenure. The justification for this and similar studies lies in the fact that, according to Pooley (1979 b), they help to identify areas of stability and change within the city which could be related to other elements of urban structure.

Anderson (1982) on the other hand is perturbed by the lack of just such linkage. To him, concentration appears to have been mainly upon the amount of movement rather than on meanings, functions and effects of that movement. He rightly questions the usefulness of individual diaries in explaining social area change, and suggests that many works have fallen foul of the perennial problem of 20th century perception. To be specific, short distance moves may

be seen as significant because we equate moving house with disruption, whereas the regular movement of people with few possessions from one accommodation to another in 19th century cities would have been commonplace, involving no wrench at leaving the former residence. Employment in many trades was notoriously fickle and without a regular income, rents on even modest properties were difficult to afford. People in such a situation were left to rely upon low rent and short-let accommodation which were tailor made for just such insecurity. If such a move was not important to them and cannot be identified as part of an overall pattern, then the point in charting the move is lost. Moreover if the general direction of movement and the change in social status zones can be identified this is merely the first step towards explanation.

Despite these reservations and the methodological problems involved (particularly the high 'wastage rate' of untraced household heads) such techniques, if not applied as ends in themselves, can help to improve understanding of a complex and fast changing period in urban history.

Fruitful results may be gained by applying record linkage to small groups of special interest, for example, those from a specific place of origin, or those residing in one small area of a town at any given census year.

Lawton and Pooley (1978) discussed the problems of data availability and suitability for the study of population mobility in 19th century England (the sources are cebs registers of births, marriages and deaths, parish registers and directories). They identify three scales of migration, termed 'macro, mezo and micro'. Thus they encompass the aggregate effects of migration within a country, and intra-urban mobility at the extreme ends of their spectrum. Their own work had tended to concentrate on the latter two categories, although they do acknowledge a holistic approach to population movement by stating that 'individual migration histories are likely to encompass a range of migration experience' (P80).

For example an individual or family may move from a rural area to a small village, then they go to a nearby town, from there they gravitate to the city and then move within that city.

It is clear that most researchers investigating at the 'mezo' and 'micro' scales of population movement have tended to use the cebs linked often to directories as the main data source. While their use, according to Lawton and Pooley (1978) is most effective in analysing the effects of in-migration upon a town or city, this study aims to show that they can yield some information on migration dynamics. Cebs can divulge information on movement into a settlement, but it is hoped to demonstrate here they they can also be useful in charting out-migration. Care must be taken at the same time to ensure that such a study does not become a mere mathematical exercise. Lawton (1979 P213) gives sound advice when he says that a variety of sources must be used and the impact of migration on a city can only be considered alongside other socio-economic factors.

MEASURING MIGRATION

While the motives for, and classes of, migration are important, it is often necessary in historico-geographical studies to delimit the size and direction of migration streams. In most cases the census reports and enumeration books are vital sources as no direct record of migration has been kept. The census documents themselves have to be manipulated, which involves taking into account expected survival rates of both natives and migrants, before an estimate of the volume of such population streams can be calculated. It is only when more is known of the size and timing of population flows that theories as to their encouraging or limiting factors can be postulated.

Two such studies pioneering census data manipulation for the purposes of delimiting migratory volumes and paths are those by Friedlander and Roshier (1966) and Baines (1972). The former examined net inter-censal migration between selected counties

using the printed census reports. The main problem with this study is that the information on migrants contained in these reports merely recorded the numbers born in county A and resident in county B at any one census date. There is no indication of when migration took place. In this 'raw' state the data yields little on the numbers of 'lifetime' migrants as compared to the number of 'current' migrants [1]. To enable an estimate of net inter-censal migration to be made they had firstly to approximate the number of previous migrants from A to B who had died in this period.

For, if the numbers of migrants from county A for both the beginning and end of the period are known, then the full impact of migration may be gauged after accounting for deaths. This cannot be done by merely resorting to, for example, county death rates, as the migrant population structure is unlikely to conform to the shape of the 'population pyramid' of that county as a whole. There are contemporary 'life-tables' which give the age - specific death rates of people in England and Wales [2], but to use these it was necessary to estimate the age distributions of migrants. A constant age distribution of current migrants was assumed in each decade, which involved a high proportion of young adults. In this case the distribution was found by trial and error, whereas Baines (1972) assumed that half the migrant population were in the 15-34 age group and the rest distributed as for the total population. Friedlander and Roshier then projected through each census taking account of the factors outlined above to arrive at a migrant distribution for six counties in 1911 for which age - specific migrant distributions were given in the census reports of that year (exclusively). They found that they had accurately predicted the migrant population structure in these counties by applying their constant 'current' migrant structure and age specific death rates through each census from 1851 to 1911. Being a measurement of net migration a number of conventions had to be adopted.

Foremost of these were:

i. a person who moves and dies in an inter-censal period is deemed only to die and to do so in his locality at the former census;

ii. a move from K to L and from L to M in an inter-censal period is regarded as a move from K to M;

iii. if a native of any county moves from K to L and another native of the same county moves from L to K no movement is assumed.

Clearly it is the balance of migration over a ten year period which is being calculated here. (Friedlander and Roshier 1966)

Baines (1972) criticised this work on a number of points viz: that because the 1911 age distribution of migrants was predicted by the authors' guesses of the age-structure of migrants in 1851 it does not mean that:

a. they were originally correct in their age distribution approximations;

b. their constant age distributions of migrants was correct and that there could not be cumulative errors;

c. intermediate census predictions were automatically correct.

Baines sums up his objections thus:

'the survivorship ratio can only be adduced given the assumption of constant age distribution of migrants, but that actual distrubution is the one which gives the best fit to the known data by using the same survivorship ratios. This introduces a dangerous degree of circularity into the whole argument' (P326).

He also raised doubts over the use of national survivorship rates rather than the construction of specific county rates, although given earlier objections, he doubted if the extra work involved would have yielded significantly more accurate results.

In spite of these faults Friedlands and Roshier demonstrate, as does Baines himself, the potential of, and the need to look beyond, the lists of migrant numbers in the census reports. The reports reveal little of the complexity of population ebb and flow over specific time periods. The key to a greater insight into such movements must lie in combining census material with death rates, as well as using the results of empirical studies which have cebs as a main source.

Baines' (1972) aim was to examine internal and external migration in a dynamic way, avoiding the 'snapshot' approach, resulting in an exposition of changes in the rate and direction of movement. Despite differences in approach from those of the former work, death rates were again necessary to determine flows. Baines produced three death rates for any migrant group:

i. The crude death rate for England and Wales [3].

ii. A death rate which assumed all 'lifetime' migrants were in the 15-34 age groups.

iii. A death rate which was arrived at by testing a model of migration in a hypothetical county from 1841 to 1891 which yielded a rate two-thirds the England and Wales crude death rate for that period.

The first and second rates here represented the upper and lower limits of the migrant death rate. There then followed a worked example of male migration from Cornwall in the 1861-70 period. Using the above rates he isolated native deaths from immigrant deaths for Cornwall. Assuming no emigration from the county, he took the total number of male natives, added the number of

births expected [4] and subtracted the number of native deaths to yield a figure 33,885 higher at the end of the period than were actually present. Therefore these people must have left for other destinations. He traced 23,408 to other counties of England and Wales in 1861 and 30,158 in 1871. Applying death rate (iii) he calculated that 4,218 died in this ten year period thus; (30,150-23,408) + 4,218 = 10,938 which were lost to other counties in this period. However, if 33,885 left the county, but only 10,938 arrived in other counties, then approximately 23,000 must have left for Scotland, Ireland or abroad. By application of death rates (i) and (ii) he can safely assert that the numbers going out of England and Wales must have been somewhere between 22,000 and 24,000.

Baines goes on to describe other studies which have examined net migration, for example the 'Pennsylvania Study' which analysed net inter-state movement in the USA by age group. This study used a census survival method of the type used by Zachariah (1962) where the national experience of an age cohort over these, not necessarily consecutive, censuses was compared to that of an individual state. Thus, it is claimed, the net-migration experience of this state for this age group can be calculated.

Here the researcher must feel that it is safe to assume that there will be no age-specific causes of mortality for this group, which are peculiar to an individual state. This method was employed by Lamont (1976) in his study of late 19th century Glasgow.

It has been necessary to describe these previous works on migration and the printed census reports at some length to highlight the skilful way in which these statistics may be used, but also the deficiencies of the source material. This work will concentrate on the manuscript census enumerators books which Baines feels have potential but also suffer from structural difficulties.

> 'Unfortunately to trace persons the investigator has to match names from one census to another. But out-migrants can never be matched in the subsequent census and via registration data, to eliminate births and deaths and to relate two groups of whom it could be said that all of those not enumerated in the second census had migrated or that all the new names were new migrants. Some interesting case histories could be assembled but a systematic migration study over several decades is probably impossible' (Baines 1972 P334).

While recognising such limitations, it is proposed here to examine migration flows within, to and from the Vale of Leven and Dumbarton, by steering a middle course betwwen the macro-scale inter-county movements as studied by Baines, Friedlander and Roshier and the micro-scale tracing of individuals (which is what is described in the quote above) carried out by Dennis (1977) and Pooley (1979 b).

The use of the census enumerators' books has certain advantages over the printed census reports. Firstly the age/sex structure of natives and migrants can be isolated (although the problem of 'current' and 'lifetime' migrants still remains to a great extent). It was precisely for this reason that Friedlander and Roshier projected up to 1911 for certain counties, because the age/sex structure was given in the reports. Secondly, specific county or sub-county death rates can be applied with precision. Thirdly, it is possible to follow an age cohort through to successive censuses, thus eliminating the problem of having to take into account birth rates which have to be considered in the majority of cases where the census reports are the main data source. Fourthly, in dealing with smaller areal units numbers of short distance moves within counties can be investigated, as the parish of birth is given in the cebs whereas the reports usually contain only the county or large city of birth. Fifthly, and most importantly, this information can be linked to occupation, marital condition, family structure, household size, place of residence within a settlement, and in some cases previous migration experience. The addition of this information broadens any migration study leading beyond mere description of numbers and directions to one

which can delve into differential migration and seek analysis of the forces shaping population movement.,

CONCLUDING REMARKS - URBAN HISTORICAL RESEARCH

In an influential collection of essays published in 1968 [5] Dyos stated that little was known about migration and urban growth and that the frontiers pushed back by Ravenstein, Redford and Cairncross had not been consolidated (P36). The direction of the work in the period between then and now has been such that his remarks still largely hold good today. Thus any empirical study such as this will hopefully add aspects of depth to a rather generalised and vague picture of the relations between 19th century population movements and urbanisation within Britain as a whole, and Scotland in particular.

As in all such analysis, where the focus is upon a comparatively small sub-region, there is a 'trade-off' between the empirical research carried out and the general theories which may apply to a larger area or a broader time scale.

Other comments from this collection of papers, like Dyos' observations, maintain their relevance. The approach used here for instance, is in line with Schnore's reasoning that of the four categories into which 'most urban sociological effort falls' namely:

i. demographic
ii. ecological
iii. structural and
iv. behavioural

(P190): the first two offer the widest possibilites. While this holds true for the geographic study of the impact of migration on a group of settlements; structural aspects, for example, of government and other organisations active within the area, and behavioural patterns of social groups must not be totally neglected. There should be recourse to Parliamentary bills, reports, newspaper accounts and other sources which describe the 19th century social climate both nationally and locally and complement the basic data.

For if that data can be ordered in some way, satisfactory explanations for that order is the next stop, and part of that explanation will lie in the way in which social groups react to, each other, industrial conditions, the housing market, town morphology and government legislation among other influences.

The need for breadth of study is a plea made here too by Checkland (1968) who believes that British historians' efforts to understand urban phenomena have taken three main forms:

a. a secular trend which is concerned with a very broad timespan charting trends in city growth from its very beginnings to the present day;

b. a thematic line, that is, the investigation of various threads which run through urban life and;

c. the 'diffuse problem of the nature of urban experience .... seen as some kind of totality in a given context over a period of time' (P345) which Checkland terms 'context'.

He suggests that while a study will tend to fall into one of these categories, the other two must not be toally neglected.

Many of the writers quoted here have stressed the necessity for a variety of data sources. The census enumerators' books, while offering by far the most comprehensive information on population must, as far as is possible, be complemented by a diverse range of relevant material of the type mentioned on the first page of this Chapter. The approach to any study of this nature must show awareness that a variety of approaches may be made to a topic, and it must acknowledge that the methods which are employed therein are not the only ways in which a successful conclusion may be reached. Recognition must be given to, and account taken of, the ways in which others have worked:

NOTES

1. 'Lifetime' migrants are those who at some undefined time in the past, outwith an inter-censal period under review, had moved either directly or indirectly from county A to county B. 'Current' migrants are those who have moved within the inter-censal period under consideration.

2. These tables also exist for Scotland. The usefulness of such tables is discussed in Chapter 4.

3. Death rates at sub-county scale are available for Scotland in the Registrar General's Annual Reports from 1855 onwards.

4. The problem of estimating birth rates stems from the fact that areas receiving migrants, among whom young adults predominate, will have higher birth rates than an area losing population.

5. Dyos H G (Ed) 1968; The Study of Urban History (London).

CHAPTER 4: THE DATA SOURCES

THE CENSUS

The most important source for the study of 19th century population structure is undoubtedly the census of population begun in 1801 and held at ten yearly intervals ever since [1]. The first four censuses are, according to Lawton (1978 P1) 'largely simple population enumerations' although:

> 'they also include information on the number of houses and families, some rather rudimentary data on occupational structure and, for 1821 only, an age structure.

The 1841 census is, thus, the first which provides comprehensive details on age, sex, place of birth, occupation and family structure. The data gathered from this census and the succeeding ones up to 1881 are available in two forms:

a. the summary printed 'reports' and;

b. the unpublished census enumerators' books (cebs).

A hundred year confidentiality rule prevents the use of later cebs, except in Scotland where the Registrar General permits access to the 1891 data, subject to certain conditions. This provides the student of 19th century Scottish population history with a great advantage over counterparts using English or Welsh data; but surprisingly little use has been made of this presently exclusive source (see however Lamont 1976, Robb 1979, Docherty 1981).

The succeeding paragraphs of this chapter will seek to describe the information which can be gleaned from these six censuses; the differences between the census reports (ie the printed census volumes) and the cebs; the problems of comparability over time; the sorting of raw data on households, occupations, places of birth and addresses and the overall accuracy of this information.

THE CENSUS REPORTS

These printed volumes contain summary tabulations of the information stored initially in the cebs. Scottish data is to be found in the census reports for Great Britain in the 1801 to 1851 period and in the Scottish census volumes for the period beginning in 1861. This presents no great problem as the methods of presentation adopted for the Scottish reports, 1861-91, were based on the structure of the 1851 Great Britain census reports (see Lawton 1978 Appendix XI Pp 289-319).

The information relevant to this study which is contained in these reports concerns population totals, housing, ages, occupations and birthplaces in different administrative divisions. There are, however, few cross-tabulations which would allow, for example, comparisons to be made of occupations of 'native' born people living in Dunbartonshire with the occupations of 'non-native' born people residing in the County.

The areal units for which information was provided are either too large or too inconsistent over time to be of vital use here. In most instances statistics on birthplaces and occupations are restricted to county level with only simple population totals for individual settlements [2].

Census reports cannot be totally disgarded as they remain useful in providing important background information and in placing the findings from the cebs sample in a wider context. They also have the advantage of being reasonably accessible and are found in most university and large reference libraries. They still remain a vast and relatively untapped source of data on Scotland's 19th century population.

THE CENSUS ENUMERATORS' BOOKS (THE CEBS)

Research into the population structure of 19th century settlements has relied heavily on the cebs (See Chapter 2). These books

were completed for each enumeration district (ED) from the individual forms completed by each household head. The unpublished books are now kept in the Scottish Record Office, New Register House, Edinburgh. (English and Welsh books are kept in the Public Record Office, London). Obviously reliance on single manuscript documents greatly restricts the ease of using these books, although the problem has been partially alleviated now that many libraries and record offices hold microfilm or photocopies of local books.

INFORMATION CONTAINED IN THE CEBS AND THEIR COMPARABILITY OVER TIME

The main data available for each household from the cebs are the address, and the names, ages, sexes, occupations, birthplaces and relationships to the head of the household for each member of that group. This information can be extracted for every household in Scotland from the 1851 to the 1891 census inclusive. While the cebs completed for the 1841 census were retained, they lack comparability with the later books in three important areas. Firstly, ages were rounded down to the nearest five years for people over fifteen years old, a problem which can be circumvented if age/sex pyramids using five year cohorts are used to allow comparison with later censuses. Secondly, the relationship to head of household column was not included and so family structure can only be guessed at. Thirdly, and most seriously in a study of migration, is the lack of adequate information on birthplace recorded at this census. For each individual in a particular location these books indicate whether that person was born inside the county of location, outside that county but within Scotland, or was born in England, Wales, Ireland or other specified countries. Figure 4:1, overleaf shows a fictitious household schedule for 1841 illustrating merely those columns associated with birthplace.

Fig 4:1 - A fictitious household schedule for the 1841 Census showing birthplace details:

	WHETHER BORN IN SAME COUNTRY	WHETHER BORN IN ENGLAND, WALES, IRELAND OR FOREIGN PARTS
John Smith	Y	
Mary Smith	N	
James Jones		I

Key to Fig 4:1;

Y = Yes; ie John Smith was born in the county of enumeration

N = No; ie Mary Smith was born outside the county of enumeration

I = Ireland; ie James Jones was born in Ireland

From 1851 onwards the birthplace data is much more comprehensive. The county and parish of birth is recorded for everyone born in Scotland and the country of birth for everyone born outside Scotland. The form of the schedule for the census years 1861 to 1891 is shown in figure 4:2.

NAME	ADDRESS	RELATION TO HEAD OF FAMILY	CONDITION	AGE M	AGE F	OCCUPATION	WHERE BORN
	71 High Street	Head	Married	40		Shipyard Labourer	Ireland
		Wife	Married		38		Lanarkshire/ Glasgow
		Son	Unmarried	17		Shipyard	Dunbartonshire/ Bonhill
		Daughter	Unmarried		15	Print Worker	Dunbartonshire/ Dumbarton
		Boarder	Widower	55		Shipyard Labourer	Ireland

Figure 4.2 - A typical household schedule 1861 to 1891 (minor columns have been omitted and headings abbreviated).

In the figure 4:2 the double slash on the extreme left hand line indicates that this 'family' or crg is the first to be recorded at the address. The single slash after the Boarder's details indicated that the next crg were living at the same address ie most frequently in a Scottish context in the same 'close'. The most common 'errors' made by enumerators were to consider each 'family' as occupying a separate house and to issue each boarder with a separate schedule. As most enumerators were at least consistent in their book-keeping there is little problem of interpretation.

Apart from some confusion over the household unit itself (see below) there were no major changes [3] in ceb format between 1851 and 1891. As a result data on ages, sexes, occupations [4] and birthplaces of the population are directly comparable over time.

PROBLEMS OF USING THE CEBS

a. HOUSEHOLD, LODGERS, BOARDERS AND VISITORS

Terms such as household, lodger, boarder and visitor were not precisely defined for enumerators and this led to inconsistencies in the methods employed in completing their books. This in turn provides problems for the researcher who naturally wishes to employ units for analysis which can be applied through space and time.

From 1851 onwards the enumerator was instructed to leave schedules for the occupier of a house and any families within that house which occupied distinct storeys or apartments. To distinguish between the last named person in any house and the last named person in a 'family' (or more correctly, 'co-residing group', hereafter crg) within a house the enumerator was to draw a long line across the page as far as the fifth column in the former case. Co-residing groups within houses were to be separated by a shorter line which was

to begin a little to the left of the third column. In subsequent censuses the long and short lines were replaced by double and single slashes respectively as shown in Fig 4:2. The definition of a house was thus indirectly implied, rather than sharply defined. Anderson (1972 P138) suggested that it was intended that each dwelling separated by a party wall should be treated as a house in its own right, although this information was not contained in the enumerators' instructions. Such were these instructions that it would have been quite logical for an enumerator slavishly following them to have included a whole terrace as a single house. Such entries were rare but the problems of definition were greater for Scotland than for England and Wales due to the predominance of the tenement in the former's urban areas. Moreover "what the English called a 'flat' or apartment was (and still is) referred to by the Scots as a 'house'". (Anderson 1972 P138)

The terms lodger and boarder were often incorrently used. Strictly speaking the lodger inhabits a room or set of rooms by and large looking after himself, whereas the boarder will live in the house and share the table with the head of a household and his family. In most cases those who have been designated as lodgers by the enumerator and have not been issued with their own schedule, ie are included as part of a larger household, are in fact boarders and should be treated as such. Most enumerators appear to have been consistent in their methods within their own districts and this eases the problem. For example, an enumerator on entering a tenement building may indicate the beginning of a separate house by giving the head of the first crg the status of head of household. All subsequent heads of crgs in their own apartments or flats were then described as lodgers. This method was rarely used by the enumerator in the samples collected for this study. In the vast majority of cases each crg was issued with a schedule and the head of household within each group was designated as such. It is important to realise though, that whilst the former method was rightly rejected by almost all of the enumerators, it would not have

been contrary to the guidelines issued to them. It is up to the researcher to adopt a common sense approach to these problems. When each ED is taken in turn the individual enumerator's interpretation of his instructions becomes apparent and co-residing groups, lodgers and boarders can be identified. Tillot (1972) illustrates this point well in relation to the heads/ lodgers problem thus: in the same ceb if the second group in a house begins in some cases with 'head' and in others with 'lodger' then the enumerator was trying to say something about their differing relationship to the first named head in either house. The two cases cannot be treated as identical.

Visitors appear in the schedules of a substantial minority of households over this period. This category has been open to a number of interpretations and approaches. Anderson (1972 P144) states that visitors should be treated separately from lodgers although 'at the margin the two categories obviously overlap'. Tillot (1972) has suggested that visitors and lodgers are often confused. Many young children are described as visitors and he suggests that this may be due to the common Victorian practice of boarding out young children for whom there is little room at home. An examination of the household structure and the names, ages and occupations of visitors can lead in many cases to a reasonable guess as to their real status.

Lamont (1976) in using the cebs for a study of inner Glasgow, deleted visitors from his households. Docherty (1981) drew attention to the fact that samples drawn from the Vale of Leven showed that a substantially greater number of houses with lodgers and boarders also had visitors, when compared to those houses without lodgers and boarders; therefore casting doubt on the veracity of visitor status in many cases.

Visitors should not be ignored, especially when household structure is under investigation, and Tillot's (1972) suggestion that household sizes should be tabulated in two ways, both with and without visitors, appears to make most sense.

b. BIRTHPLACE INFORMATION

The lack of comparative data on birthplace seriously affects the usefulness of the 1841 census in the study of migration, as suggested earlier in this Chapter. County and parish of birth records appear for every Scots born person in the 1851 and subsequent censuses. Enumerators were not required to produce information at county level for those born outside Scotland, although they sometimes did so.

Information on birthplaces is usually straightforward and unequivocal and it allows a great deal to be accomplished on inter-parish, county and regional movements, on concentrations of particular ethnic groups in specific zones of a town or city, or on the migration experience of families through an investigation of parents' and children's birthplaces. However there are serious limitations on the use of this source in migration studies. For example, a person may be recorded as having been born in place A and at census time residing in place B (or even place A) but little or nothing can be known of their movements in the interim period. Even where the opportunity arises to trace the migration of families through the birthplaces of children, it is fraught with difficulty. Armstrong (1968 P84) believes that this method falls down on two points thus:

i. 'a great deal of immigration was that of single people whereas a scheme of this type only gives information on families'.

ii. 'in a given area, the earliest families to move will stand a far greater chance of having moved out again. Hence any curve of inward migration (say over ten years) will almost certainly be a rising one, since a greater proportion of more recent migrants will still be there; ie the fluctuations in immigration, even of already married couples, may be grossly misrepresented'.

In the first case the representativeness of the body of data is perceived as the problem as it may produce a biased account of migratory experience. Armstrong believes that such a method does not appear to be of any use in saying much in general about migration or migrants moving to specific locations. However such information could improve our understanding of the migration process. For example, a rudimentary analysis of the current sample of children's birthplaces suggests that migration to and from towns is worthy of further study. Simply because a sub-group is small and possibly not fully representative of the whole migratory picture, is not to prevent it from giving depth and colour to part of that picture.

In the second instance Armstrong warns against a misrepresentation of the impact of migration. To prevent this immigration statistics must be set against the gross totals of migrants. Baines 1972 has already demonstrated that gross migration flows can be obtained reasonably and accurately for separate counties from the Census Reports, and it is the intention here to show that a similar method can be used, building on the work of Baines, Zachariah (1962) and Friedlander and Roshier (1966), to demonstrate that gross inflows and outflows of migrants can be derived from the cebs. An attempt to trace individuals from one census to the next is impractical even if dealing with only one town. As R J. Dennis (1977) showed, the work is too wasteful to yield satisfactory results.

The lack of data at county level for those born outside Scotland is an unfortunate omission, for this would have provided a useful insight into the places of origin of groups like skilled English printworkers and more importantly the vast influx of Irish immigrants who came to the West of Scotland throughout the Victorian era. A study of the regional or county pattern of birthplaces of Irish immigrants found at any particular location in Scotland is therefore untenable,

whereas the regional pattern of emigration from Ireland has been well charted by Cousens (1960, 1961 & 1965) although his interpretation has recently been challenged by O'Grada (1977) (see Chapter 3). An overall picture of migration flows from areas within Ireland to areas within Britain cannot be achieved by using census data, although a broad pattern of movement has been established using other sources (see Handley 1964). Occasionally an enumerator did enter the county of birth of Irish immigrants and this may help to improve and deepen knowledge of this pattern. Admittedly this source is far from perfect, often consisting of isolated enumerators' books from small areas within towns and cities, it can hardly be expected to yield conclusive proof for any interpolated theory of migration flows.

c. OCCUPATIONAL INFORMATION

Occupational information from cebs has been used in two main ways:

i. To determine the social status of groups of individuals and thus in Geography to delimit 'social areas' within towns or cities (see Shevky & Bell 1955 for examples of pioneering work in this field).

ii. To group occupations into categories of employment which are then used to analyse the dependency of an area on an industry or group of industries.

i. Class and Status.

The former field of enquiry has generated extensive discussion and much more controversy than the latter and the whole efficacy and point of socially stratifying from census returns has recently been called into question. (Cannadine 1982; Anderson 1982).

Armstrong (1968 & 1974) suggested the use of the General Register Office's classication of occupations, published in 1951, for this purpose. This classification can be summarised thus:

Class 1 - Professional Occupations
Class 2 - Intermediate Occupations
Class 3 - Skilled Occupations
Class 4 - Partly-Skilled Occupations
Class 5 - Unskilled Occupations

The use of this scheme has been criticised on a number of counts. The main objections centre on its suitability for use on 19th century data. The partly skilled category came in for special criticism in this respect being seen as an essentially 20th century phenomenon. When Armstrong used this classification, class 3 in practice encompassed a very large percentage of his sample population making differentiation difficult. Perhaps the most serious criticism made of Armstrong and subsequent writers on the same topic such as Cowlard (1979) and Royle (1977), who both devised their own classification based not only on occupation but on other criteria like numbers of servants, is their apparent perceptions of the terms 'class' and 'status' as being the same thing.

Armstrong uses 'class' in the sense of 'classification' and states that:

> 'Many draw an important distinction between class and status, preferring to use the former only in its Marxist sense of relationship to the means of production, while viewing the status hierarchy rather as a reflection of the distribution of esteem in society'. (1972 P201)

He does not draw that distinction, and to support his argument he suggests that modern sociologists have often used these terms ambiguously. However Cannadine (1982) describing this dichotomy states:

> 'if (class) can be used simply as a descriptive term denoting .... the statistical category of people united by having certain objective criteria of stratification, not conscious of itself as such, and not doing anything as such .... (quoting Vincent 1967 P21) or one might argue that the more important definition is class as class consciousness; that actors must be aware of their class identity and act upon that basis' ....
>
> 'Most social historians who use the concept of class would accept that the only valid definition to take is that of class as class consciousness'.

If class is therefore subjective it becomes exceedingly difficult to measure from 19th century data such as the cebs.

Even if social segregation is recognised, the meaning of that differentiation is by no means clear. As Anderson (1982) points out Foster (1968) who appears to positively correlate social segregation with social stability in 19th century Oldham is in direct conflict with Perkin (1969) who associates greater social segregation with an increase in friction between classes.

The debate on class, status, social stratification and segregation continues and it would be unwise to offer any possible solutions here because it may be impossible to reach a satisfactory conclusion at present given the state of debate and the lack of comparable empirical analyses. It is vital to avoid taking research in a direction where serious flaws may exist in the underlying methodology. Using one body of data but different methods of stratification can result in contrasting pictures of areal segregation. Even if the pictures are recognisably similar there can be disagreement as to what they mean. The present situation indicates a lack of cohesiveness in terms of both describing and explaining the structure of 19th century cities and towns. Many of the apparent inconsistencies have been exposed, but much remains to be achieved in either explaining or removing

them. Perhaps some explanation for the confusion lies, as suggested earlier, [5] in the uniqueness of towns, to the extent that even where similar spatial processes appear to be operating in a number of towns these may not always be open to a universal interpretation.

ii. Industrial Structure

Occupational classification has excited much less controversy, but is no less significant, than any grouping by social class or status. The changing composition of the industrial base can have profound effects on population mobility and stability. To explain patterns in 19th century towns in terms of status and class only, without reference to the broader industrial and economic climate or important considerations such as the housing market has proven to be a fairly sterile exercise.

Classifications of industrial groups appear in the census reports and include groups such Shipbuilding, Metal Industries and Mining and Quarrying. Subsequent schemes, the best known being the one by Booth, are not radically different from the original. The narrow industrial base of Dumbarton and more expecially the Vale of Leven makes classification, in this case, almost self evident.

d. PROBLEMS OF ADDRESS INFORMATION

The precision with with a household is given an address affects the accuracy of locating it and its usefulness in a small scale spatial analysis.

Most cities, by the second half of the 19th century, had named streets and numbered buildings. Even in small towns address information could be quite precise, particularly in well established areas. Addresses in the Urban/Rural Fringe were usually less systematic. Cities too had areas where

the addresses provided in the cebs were less than perfect, these tended to be in overcrowded back courts where dwellings were neither named or numbered. This was also a problem in Dumbarton, especially along the choked burgage plots of its old High Street core, where in many cases well over 100 people were given the same tenement address. Individuals can be located at burgage plot scale, and while this may appear to be precise enough for most purposes it does present considerable problems for certain small-scale analyses [6].

On the edge of towns and in villages, like those in the Leven Valley, address information was inconsistent. A common type of address recorded, stated merely that the household was on a person's land eg 'Smollett's Land' or slightly better 'Smollett's Land - Main Street'. It was just such quality of information which led Warnes (1973) in his study of Chorley, to declare that the lowest scale of analysis which could be achieved was at street level. Such a restriction has perhaps made the study of smaller towns less popular than those of the larger town or city [7] where social areas at least appear to be easier to define. This suggests that a different approach to social structure and its spatial manifestations within smaller settlements is necessary, especially in Scotland where tenement living may have introduced an element of vertical segregation, as in 17th and 18th century Edinburgh, as well as the areal differentiation which existed amongst the English terrace and cottage dwellers.

THE CENSUS: CONCLUSION

The vast majority of data available from the 19th century censuses from 1851 onwards is unequivocable. Most of the inaccuracies or problems over household, lodgers and boarders for example can be circumvented by a common sense approach to the handling of the data source, as opposed to setting down a number of rules with their attendant exceptions. This is greatly facilitated by the

consistency of most enumerators in setting down information. In the majority of cases it is obvious where, for example, an address refers to a tenement containing a number of quite separate families (or crgs) which have boarders in some cases, as against a building which contains a main family and another secondary family (or families) of lodgers.

The problems really arise when manipulating that data; in grouping occupational, and other information, to allow the social classification of households; in looking at mobility and migration with images, ten years apart frozen in time; in pinpointing exact locations for small-scale spatial analysis and of course in sampling the data, which is the subject of the next Chapter.

THE REGISTRAR GENERAL'S REPORTS

The Registrar General's Reports produced annually since 1855 detail parish births, marriages and deaths as well as the major causes of mortality in each year. As with many such reports produced over a long period, the information which is published or the way in which it is presented is not always consistent. In this case, for example, the births, marriages and deaths were broken down in quarterly returns until 1871. After this date only the annual aggregate was published, but extra details were to be had on age-specific mortality.

In migration studies of the type undertaken here, none of the data in the Reports can be used without some manipulation. Death rates for the census years are easy to compute using the formula:

$$\frac{\text{No of Deaths in Parish at Census Year X}}{\text{Population of Parish at Census Year X}} \times 1000$$

However, death rates for inter-censal years can only be estimated as the population is unknown at these dates. In this case it was decided to lift data on the four census years 1861, 1871, 1881 and 1891 as well as for the intermediate years of 1866, 1876 and 1886. In the latter cases the death rate was calculated thus:

$$\frac{\text{No of Deaths in Parish at Intermediate Year X + 5}}{\dfrac{\text{(Population of Parish at Census Year X)} + \text{(Population of Parish at Census Year X + 10)}}{2}} \times 1000$$

This produces seven death rates for the forty-year period between 1861 and 1891 for both Dumbarton and Bonhill parishes. By themselves the death rates do not yield information on the distribution of deaths throughout the life-cycle, that is, the death rates are for the whole population and are not age specific. As any migrant population tends to be drawn predominantly from those in the middle stages of the life-cycle, the general death rate is inapplicable. Baines (1972) using county figures to estimate population movements arrived at a death rate of two-thirds of normal for his migrant stream. O'Grada (1977) consulted Coale and Demney's 'Regional Model Life Tables ....' (1966) to produce broad age-cohort related death rates for mid-nineteenth century Ireland. Fortunately for this study there is access to more detailed statistics as, from 1872 onwards, the Registrar General's Reports detail 'Deaths at Different Ages' for various districts at county and sub-county levels. While they do not give details for individual parishes they did produce tables for the 'small town districts' of each county. These can be used to estimate death rates within the mobile age groups which are considered here for particular analysis in the study of migration processes affecting Dumbarton and the Vale of Leven. Details for 1872, 1881 and 1891 were lifted. When the age-specific figures were compared to the total number of deaths in each year it was found that the proportion of deaths occurring at under five years of age was over 30% (in 1872 it was a staggering 39%). The

proportion of deaths occurring at sixty years of age or over was always over 0.2 or 20%. As expected the percentage of deaths occurring in the 15 to 45 age groups was relatively small, at c 18% to 21%. this represents an average percentage of c 3% to 3.5% of total deaths in each of the six five-yearly cohorts making up this group. To emphasise the accuracy of this calculation it should be noted that for all three years, 1872, 1881 and 1891, the percentage of deaths occurring in each of the five yearly cohorts from 15 to 45 years of age was never less than 2.5% and never more than 4.3%.

The percentages involved are so small that fairly precise estimates of expected survivorship amongst both natives and migrants in these age groups can be achieved. This will allow the accurate delimitation of net inter-censal population movement at the 'mezo' or sub-county scale, using age-specific death rates to estimate the expected numbers of natives and migrants in the mobile age groups at subsequent censuses. The expected numbers can then be compared to the actual numbers present in both groups and the effects of in or out-migration will become more apparent.

LIFE TABLES

The most accurate way of estimating age-specific death rates and survivorship rates would be by using life-tables created for this purpose. But here problems stem from the availability and comparability in both time and space, of suitable life-tables. Such tables were not produced by the Registrar General or any Scottish Office department. They were largely produced by life-insurance companies which had an obvious interest in such data, or by Medical Officers of Health for the larger cities.

One such set of tables, produced for Glasgow (1881 to 1890) by A K Chalmers (1894), a Medical Officer of Health for the City, serves to illustrate the difficulties encountered in using this

tool. Firstly, Chalmers provides revealing comment on the representativeness of many life insurance tables, thus:

> 'In applying the principles of Life Table construction to the purpose of Life Insurance, the persons constituting these lives at risk are largely those of a selected class, selected, that is, by medical examination, and constituting a class of healthy lives. To this class no one who is subject of recognisable disease is admitted; and, in like manner, the deaths which occur will only be of those, who, at one period of life had attained a definable standard of healthy living. But many lives never reach this standard, yet a place must be found for them if we are to represent accurately their effect on the average vitality of a population. That is, the whole population and all the deaths must form the basis of our calculation, if we are to estimate the average probable duration of life for the individual' (P1).

While insurance companies were unlikely to underestimate age specific death rates for their clientele, they were nonetheless dealing with a very unrepresentative sample of the population. Few of the labouring classes would have had any form of life insurance and life tables were produced with the middle classes firmly in mind. The gap between rich and poor in Victorian society was considerable as the following statistics for two districts in the City of Glasgow illustrate:

	BLACKFRIARS	WEST END
Population Density per acre	328	34
% Population Under 5	13.6	9.11
Birth Rate (per 1000)	44	17
Death Rate Under 5 (per 1000)	213	34
Death Rate Over 5 (per 1000)	95	5. 3

Source: Gibb 1983, P130 quoting Strang 1861.

Any life tables based on a predominantly middle-class population structure of the type found in the 'West End' district of Glasgow

would have little immediate application to inner-city districts like Blackfriars.

Chalmers' own tables were based on the whole population of Glasgow and are free from such bias, but they are limited to that city with its atypically high death rate in a Scottish context. Although the age-specific death rates of Glasgow as proportions of the total death rate were closer to the Scottish experience, it would be unwise to assume that this life table could be adapted easily for another location or time period. The need to even consider such adaptation is due to the glaring lack of more suitable alternatives. Chalmers reported that, his was only the third such table produced for Glasgow in the 19th century; similar tables for the same time period had been produced for Manchester and Brighton; no life tables existed for Scotland as a whole.

Given the disadvantages of attempting to manipulate these existing life tables for Dumbarton and the Vale of Leven over the 1861-1891 period, with no concrete information on age-specific death rates and merely the parish crude death rates to act as a basis for calculation, it was decided that similar levels of accuracy could be obtained in a simpler manner by using the information obtained from the Registrar General's reports.

OTHER RELEVANT SOURCES

There are unfortunately, few alternative and relevant sources which could be used to support the results of census research. Parliamentary papers and local histories can yield supplementary information at national and local levels, but they lack comprehensive detail. Local newspapers covering the study period are preserved, but are disappointingly lacking in detailed coverage of anything other than major local events. Both histories and newspapers may report strikes, occasional violent

clashes between Irish and Scots and patchy, speculative and often contradictory information on the state of local industry. There is little on housing, the high turnover of population, social areas within towns or working conditions, for example. Where such information does appear it has been used, particularly in the opening chapters.

Some remnants of company accounts for the Vale of Leven printworks are housed in the University of Glasgow, but these are difficult to interpret. They mainly provide details on export destinations. Shipbuilding company records are similarly esoteric, although Dennys', Dumbarton's most famous shipbuilding company, have had 'lists' of their vessels published which outline for each one the date of completion, tonnage, buyer and a brief history of its service (see bibliography for details).

The Dumbarton, Vale of Leven area was very poorly served by 19th century directory publishers. At present few bona fide directories for Dumbarton burgh are known to exist and they suffer from the problem of many directories in that there is incomplete enumeration, with the working classes generally excluded. Their use is, therefore, limited when the population as a whole has to be considered.

NOTES

1. With the exception of 1941.

2. The exceptions being the cities and 'principal towns' for which extra information is available.

3. For indication of minor changes see Lawton 1978 or Wrigley 1972.

4. It should be remembered that the nature and status of occupations does however change over time. For example, the nature of Calico Printing changed from being largely manual (block printing) to predominantly mechanised (machine printing). The status of a clerk in Victorian times was likely to have been higher than it is today due to the lower levels of literacy then. Fortunately over the thirty year span of this study there were no major changes which grossly affect comparability.

5. See Chapter 3: The Present Study in Context

6. See Chapter 5: The Problems of Sampling

7. See however previous Section on Occupational Information and Chapter 3: The Present Study in Context

CHAPTER 5: THE PROBLEMS OF SAMPLING

THE AREA COVERED BY THE SAMPLE

The area from which the sample was drawn covered only the townward areas of Dumbarton and the Vale of Leven. Therefore the sample was taken from Enumeration Districts which were:

a. in, or partly in, the burgh of Dumbarton including the portion in the parish of Cardross on the west bank of the River Leven, but excluding the separate settlement of Milton just over 2 miles from the eastern edge of the burgh as it was in 1891;

b. in the villages of the Vale of Leven namely Renton, Alexandria, Bonhill and Jamestown, excluding non-industrial Balloch to the north. Where an ED straddled the rural/urban 'divide' only the urban sections of that district were considered for sampling.

The use of the word divide, above, is perhaps a contentious one as town and country did not, and do not exist as separate entities, independent of each other. There were, for example, families with predominantly rural occupations living in these small settlements, and people in rural locales with factory occupations. However, as the main concern of this thesis is to examine the industries and occupations, the birthplaces and migratory experience of the population, then the focus must be the emerging industrial towns.

Admittedly the changing nature of the urban/rural relationship in the 19th century is a neglected field which requires serious study and perhaps provides a starting point for future work on this area.

The reasons for the choice of settlements examined here is outlined in detail in Chapter 1. The fundamental essence of which lies in the apparent historical and industrial contrasts in settlements of such close proximity, which may highlight important ways that population interact with and react to a changing industrial climate.

THE YEARS CHOSEN FOR THE SAMPLE

As indicated in the previous chapter, the use of the cebs allows detailed study of the population structure for the decennial census years of 1841 and 1891 inclusive. The years chosen for sampling were 1861, 1871, 1881 and 1891. Apart from the lack of comparability of the 1841 data, the reasons for that choice were guided by the distinct changes which the basic industrial structure in this area underwent at the time. The printwork suffered as the American Civil War (1861-1865) reduced cotton supplies, and later foreign competition, trade slumps and 'centralisation' of operations in England led to the ultimate demise of the industry. In contrast the shipyards and heavier industries of Dumbarton generally prospered. (For full details see Chapter 1).

THE SIZE AND TYPE OF SAMPLE

For the years 1871, 1881 and 1891 a sample of 1000 co-residing groups (crgs) or 'households' was drawn. Five hundred were from Dumbarton and 500 from the Vale of Leven villages in each year. For the year 1861 a 1000 crg sample would have represented c 25% of the families in the sample area. A sample containing such a large proportion of the 'parent population' can be substantially reduced without greatly affecting the confidence limits by employing the finite population correction formula:

$$n = \frac{no}{1 + (no / N)}$$

no = previous sample size

N = total 'population'

therefore

$$n = \frac{1000}{1 + (\frac{1000}{4000})}$$

$$n = 800$$

Therefore for 1861, 800 crgs were lifted. Four-hundred from Dumbarton and 400 from the Vale of Leven. This produces a total sample of 3,800 families containing approximately 17,100 individuals. It was decided to draw a fixed size sample rather than a fixed percentage of the schedules at each census due to the rapid growth of population over this period.

For example a 5% sample while ideal for later census years, would have been too small and probably unrepresentative if drawn from the earlier censuses, whilst a 10% sample suitable for the earlier censuses, would have been too large and unwieldy to draw for later years.

To ensure a spread of sampling among enumeration districts a proportionally allocated, stratified random sample was drawn, that is, a sample was drawn from each urban enumeration district proportional to the number of households in that district as a fraction of the total number of households in either Dumbarton or the Vale of Leven. The sample within each district was also random rather than systematic to avoid any 'periodicity' (Schofield 1972) in the parent population which could bias the sample. Examples of this would include:

a. taking the even numbered houses in a street which could prove to contain a different house type and a different type of occupant from those on the other side of the road;

or

b. taking the first family at each address in a tenement or terrace which may include a high proportion of shopkeepers and their families occupying the ground floor of these buildings.

While such situations would be unlikely they are not totally implausible. Random sampling involves little extra work and avoids such possibilities.

SAMPLING HOUSEHOLDS AS OPPOSED TO HOUSEHOLD HEADS

The decision to sample complete households rather than household heads only, was taken in spite of the fact that a sample of household heads is easier to manipulate statistically. The individuals within a household tend to have like characteristics, such as similar occupations, birthplaces and age groups which makes the confidence limits of such a sample wider than if the same number of people had been sampled separately rather than in household clusters. In other words, the sample cannot be regarded as 17,100 individuals, but rather c 17,100 people sampled in 3,800 clusters. Whilst some fine precision in statistical significance may be lost, the sampling of co-residing groups allows important relationships to be studied. The birthplaces of children and the timing of these births may prove significant in the study of migration flows. The occupation and birthplaces of lodgers compared to those of the head of household; the occupations of household heads taking in lodgers; the comparison of male and female job opportunities and the effect which this has on migration, are among many relationships which can be studied using such a sample. In short, a sample of household heads is not representative of a community per se; and

the experience of communities which are undergoing transformation due to migration or a changing industrial and occupational structure, cannot be adequately gauged by this method. · The sample taken here is not only more representative and suited to this purpose, but it can also be used again in a wide range of studies of, for example, family structure, fertility, the extent of schooling and employment of children.

THE PROBLEMS AND DRAWBACKS OF SAMPLING

Sampling, by its very nature, blurs images of the past; but two points must be made in mitigation; firstly, the extent of blurring can be measured; and secondly, a crystal clear picture or map of a landscape, be it a physical, urban or social one may have hidden depths and can be open to a variety of interpretations.

If the population of a number of settlements is to be examined at several census points then sampling is obviously necessary. In contrast, Robb (1983) lifted data on every co-residing group in the Gorbals area of Glasgow for 1851, 1871 and 1891. In examining small scale segregation he rightly questioned many of the assumptions of those who, in sampling city-wide had found evidence of large-scale differentiation. However Robb's work was of necessity limited by the very size of the area which he studied. At the opposite end of the spectrum, Professor Anderson of Edinburgh University has been involved in a large research project to draw a 2% sample of households for the whole of Britain at the 1851 census. Such a sample allows regional trends to be discerned, and the Britain of 1851 can be compared to modern Britain for which information at this scale is readily available. Such a sample cannot and was not designed to, provide data on fine contrasts at sub-regional level.

It is clear that for the study of cities or sizeable towns sampling is needed. Lawton and Pooley (1976) in an important SSRC sponsored research project on 19th century Liverpool, took a sample of 11,000 households initially, and further clustered

samples of particular groups, whereas Lamont (1976) in his doctoral thesis on inner Glasgow 1871-1891, drew two 5% samples amounting to 2,846 co-residing groups and a 5% sample from lodging houses. In each of the four cases cited the data was lifted with a number of specific objectives in mind, and outwith these contexts such data may be of limited usefulness.

DUMBARTON AND THE VALE OF LEVEN: SAMPLE DESIGN AND ASSOCIATED PROBLEMS OF ANALYSIS

This sample was designed to yield information on topics principally in the fields of ethnicity, migration and occupation; it is used specifically in examining:

a. the ebb and flow of migrants to, from and between the prescribed settlements;

b. the variation in population structure for both natives and migrants over the second half of the 19th century;

c. contrasts and changes in the local employment structure; and

d. the residential location of ethnic and social groups.

Such analysis is set in the context of changing industrial, economic and social conditions in 19th century Dumbarton and the Vale of Leven.

While comparisons can be made between the Villages and Dumbarton, difficulties do arise in differentiating social areas within settlements. The most common approaches to social area analysis and its successors involve analyses by grid squares or enumeration districts.

In the former, the addresses are pinpointed on a large scale map and are assigned to a grid square usually of the order of $100m^2$

or 500m^2. 'Average' values for each square can then be derived for whatever factor is being measured. This method, its proponents argue, is superior to using the arbitary shaped enumeration district. Certainly the enumeration districts in most towns were drawn up with only one vague rule on the approximate upper and lower limits of the number of households to be included. They were of no fixed shape and could often change over time. The former method also has its detractors, for example, address information was, as described in the previous chapter, often recorded imprecisely and may not adequately identify the exact location of addresses and some grid squares may contain too few samples and have to be discarded. Using ceb data neither method can be used to discern vertical contrasts, nor contrasts down long burgage plots; differences at this scale may be important in identifying segregation in small towns. The address of the shopkeeper who owned and lived in a ground floor flat at the front of the tenement was more often than not the very same as that of the family squeezed into a temporary hut at the end of a 180 ft burgage plot or of the lodger living in attic accommodation, four floors up and to the rear of the building.

In any case, there is often the dangerous assumption that reliable address information, leading to the accurate location of households, which can then be compared in terms of birthplace, occupation, social status, or a myriad of other indicators, will always unlock secrets on social structure or behaviour. Migrants may cluster together, sometimes for purely cultural reasons, or because of contraints placed upon them (Pooley 1982); but a lack of migrant clustering does not necessarily mean a weakening of cultural identities which can be nurtured through cultural or social institutions such as Gaelic language societies and, of course, the churches.

While the cebs are undoubtedly the best and most objective source for the study of 19th century ethnicity, occupation and migration, careful research design is essential. The limitations of the source must be admitted, alongside limitations engendered by sampling. The results of research can only be meaningful if they

are seen in the light of the wider social and economic forces operating at that time and which may be identified not only through modern secondary sources, but through contemporary accounts such as newspaper articles, council minutes and parliamentary papers (despite the latter's limited usefulness).

The sample drawn is therefore intended to encompass:

a. settlements with contrasting industrial structures and;

b. a time scale which will reveal the effects of these differences.

SAMPLE SIZE AND THE PRECISION OF ESTIMATES

All samples are subject to error and this error often crucially depends on the size of the sample drawn. In this case 1000 census 'families' (crgs) were lifted for each of the four census years, this represented c 4,500 individuals per census year [1]. However as Dumbarton is being compared to the Vale of Leven, the samples of either location must be treated separately, that is, two samples exist, each of 500 crgs (c 2,250 individuals).

The standard error of the sample depends not only on the size of the sample but on its variability too. Thus if for an estimated proportion [2] the sample was not very variable (the proportion or percentage of the sample with the attribute was either very high or very low) then the standard error will be lower than if the sample was extremely variable. The most variable sample is one where half the samples have an attribute and half do not (0.5 or 50%). Using this most pessimistic of examples, the standard error of the sample can be calculated thus:

Estimate of a percentage of items in the population with a given attribute

$$p = p$$

with standard error $S(p)$

$$S(p) = \left\{ \frac{p\ q}{n-1} \right\}$$

Where p = percentage of sample items with attribute

q = percentage of sample items without attribute

n = number of items

$$= \frac{50 \times 50}{2250 - 1} = 1.05$$

Standard error = 1.05

If confidence level is set at 95% then the confidence limits are set at 1.96 times the standard error. In this case $1.05 \times 1.96 = 2.06$.

Therefore, the percentage with the attribute is believed to be 50%, but it is 95% certain that the true percentage lies 2.06% either side of 50%.

There are problems which effect the standard error of this sample and it is essential that they are recognised. The first, and potentially most serious problem, concerns the way in which the sample size is fixed at 2,250 individuals but the fact that they were sampled indirectly, in 500 household clusters (or crgs), affects the standard error of the sample. The reason why this

indirect method of sampling is less efficient than a direct method lies in the internal homogeneity of many clusters. Many people within a household (cluster) will have been born in the same place; they may have similar occupational characteristics and social status; and children may fall into a narrow age range. It would be possible to sample individuals directly from the census enumerators' books, but it may be desirable to extract information on households too, and therefore household sampling was seen as offering the best compromise. The formula for calculating standard error when the sample has been drawn in clusters is as follows:

$$S\ (p) = \left\{ \frac{1 - f}{n\ m^2} \quad \frac{i = i \quad mi^2 \quad (pi - p)^2}{n - 1} \right\}$$

Where f = the overall sampling fraction

m = mean number of elements per clustered item

mi = total number of elements in a given clustered item

pi = proportion of elements in each clustered item with the attribute.

The difficulty in applying this formula stems from the fact that the variability of each cluster must be calculated to derive the standard error. This may be desirable in small samples where the work involved is not greatly time consuming and the difference between the simple standard error and the standard error for individuals sampled in clusters may be considerable. In this case, the sample is too large to contemplate examining the variability of each individual cluster to yield confidence limits c $\pm$ 1% wider than initially set by the similar formula. It is possible to show the absolute outer confidence limits by taking the sample size at 500. This is being unduly severe on the accuracy of the sample, but it will give some indication of the

slight difference between the standard error of a large sample and that which is sampled in 500 clusters.

$$S\ (p) = \left\{ \frac{p\ q}{n-1} \right\} = \left\{ \frac{2500}{499} \right\} = 2.23$$

Confidence limits at 95% level = 1.96 x 2.23 = 50 $\pm$ 4.

The correct standard error will lie somewhere between 2.06 (calculated earlier) and 4. It is worth stressing that the error could never be as large as $\pm$ 4 in any situation here, because:

a. the sample was not merely 500 individuals as this formula appears to indicate, but consisted of c 2,250 individuals sampled in 500 clusters and;

b. the variability will not always be as great as 50%.

Less variability produces narrower confidence limits. For example taking the observed percentage as 15%.

$$p = 15 \qquad q = 85 \qquad n = 2250$$

$$S\ (p) = \left\{ \frac{p\ q}{n-1} \right\} = \frac{1275}{2249} = 0.75$$

0.75 x 1.96 = 1.47 - At the 95% confidence level 15 $\pm$ 1.47

with n = 500

$$\frac{1275}{499} = 1.60$$

1.60 x 1.96 = 3.13

15 $\pm$ 3.13

At the 95% confidence level the confidence limits would lie between $\pm$ 1.47 and $\pm$ 3.13.

Another problem may arise where an estimated proportion is of a small size. If a proportion is 10%, then the minimum sample size must be 600 for the formula to apply; a proportion of 5% requires a minimum sample size of 1,400. The present sample should be relatively unaffected by this refinement, but if proportions are smaller the standard error must be calculated from special tables.

It is clear that the samples lifted for this study allow accurate and unambiguous estimates to be made in the majority of cases.

NOTES

1. With the exception of 1861. For explanation see earlier in this chapter.

2. As this sample will be used in the main to delimit proportions (percentages); (eg the proportion of population who were born locally, or the percentage employed in shipbuilding) as opposed to mean values (eg average age of the population or average household size) the following explanation and formulae refer to proportions not mean values, although where appropriate such alternative formulae have been used to determine standard errors in this work.

NB The formulae used in this section all come from R S Schofield Sampling in Historical Research, Chapter 5 in Wrigley (1972).

CHAPTER 6

THE CENSUS REPORTS FOR DUMBARTON AND THE VALE OF LEVEN 1861-1891

The census reports provide summary tables for areas at parish or village scale, which include details of: the total population; sex balance; the number of houses, inhabited, uninhabited and building; the number of rooms with one or more window; and the number of families. To provide a broad background to population trends, particularly with respect to occupancy and housing conditions, cross tabulations were made for Dumbarton and the Vale of Leven for this period.

As with the sample of cebs, only the townward areas were considered, as rural housing conditions may have been different from those in the nucleated settlements. This immediately posed a problem as separate figures are given for Jamestown in only one of the reports (1881). In the others it is regarded as part of the landward area of Bonhill Parish, and therefore could not be included in these cases.

The table overleaf (Fig 6:1), shows the information taken from the reports which was cross tabulated. The results are also shown in graph form along with a population graph of Dumbarton and the Vale of Leven for that period.

FIGURE 6:1	DUMBARTON				VALE OF LEVEN			
	61	71	81	91	61	71	81	91
1. Average Family (crg) size	4.08	4.49	4.44	4.75	4.93	4.74	5.18	4.9
2. Average Population per Room (with 1 or more windows)	2.03	2.06	2.15	1.94	2.39	2.20	2.38	2.14
3. Average No of Rooms per House	7.1	7.65	2.59	2.64	5.6	3.11	2.24	2.34
4. Average No of Rooms per Family	2.01	2.18	2.07	2.44	2.06	2.16	2.18	2.29
5. Average Population per House	14.4	15.74	5.56	5.12	13.38	6.88	5.35	4.9
6. Average No of Families (crgs) per house	3.52	3.51	1.25	1.08	2.71	1.44	1.03	1.02

Key to Figures 6:2 - 6:7

———.———.———.——— Vale of Leven

———————————— Dumbarton

The numbers 61, 71, 81 and 91 on the X - axis represent census years 1861, 1871, 1881 and 1891 respectively.

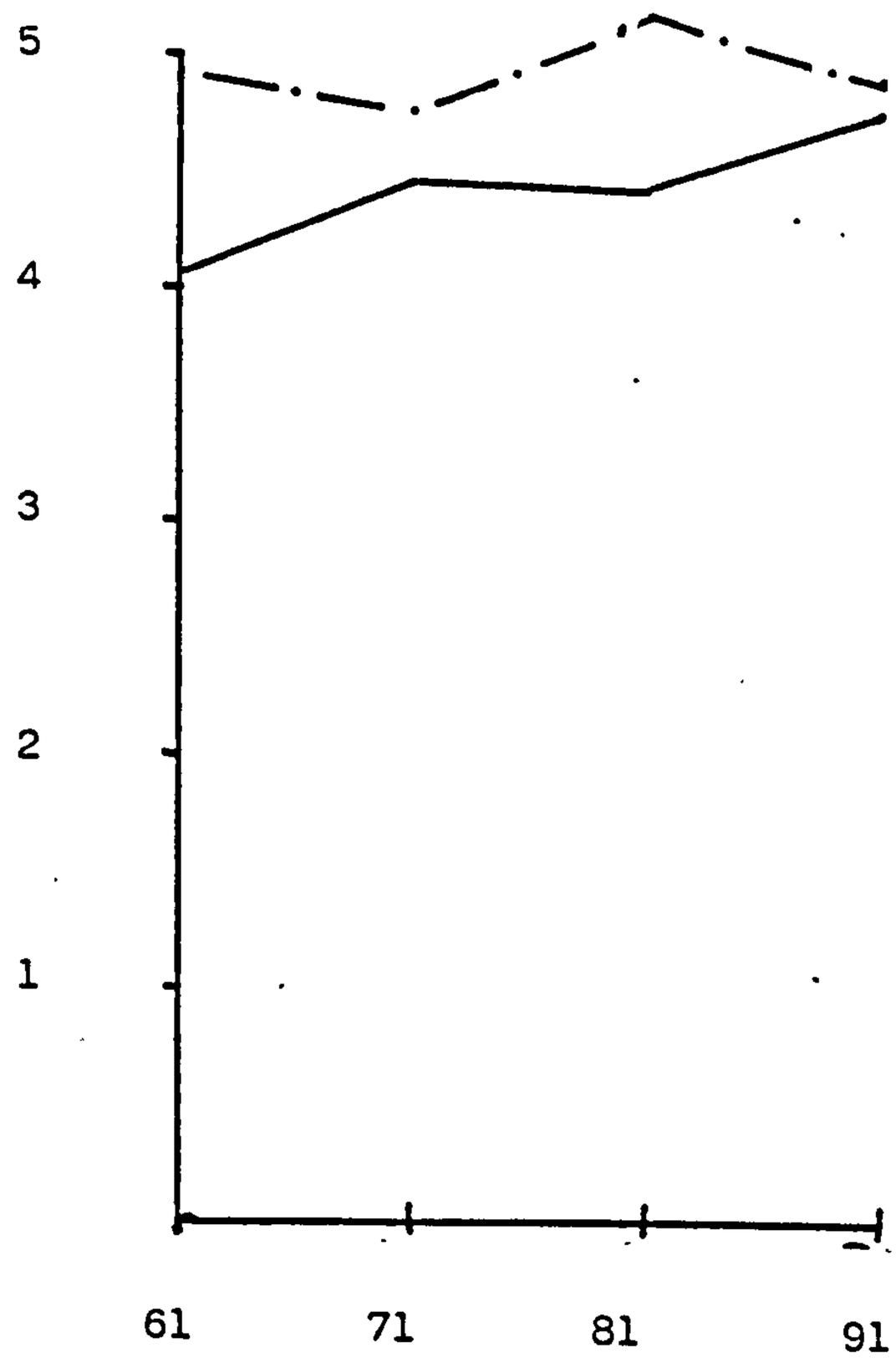


Fig 6:2 Mean c.r.g. (family) size

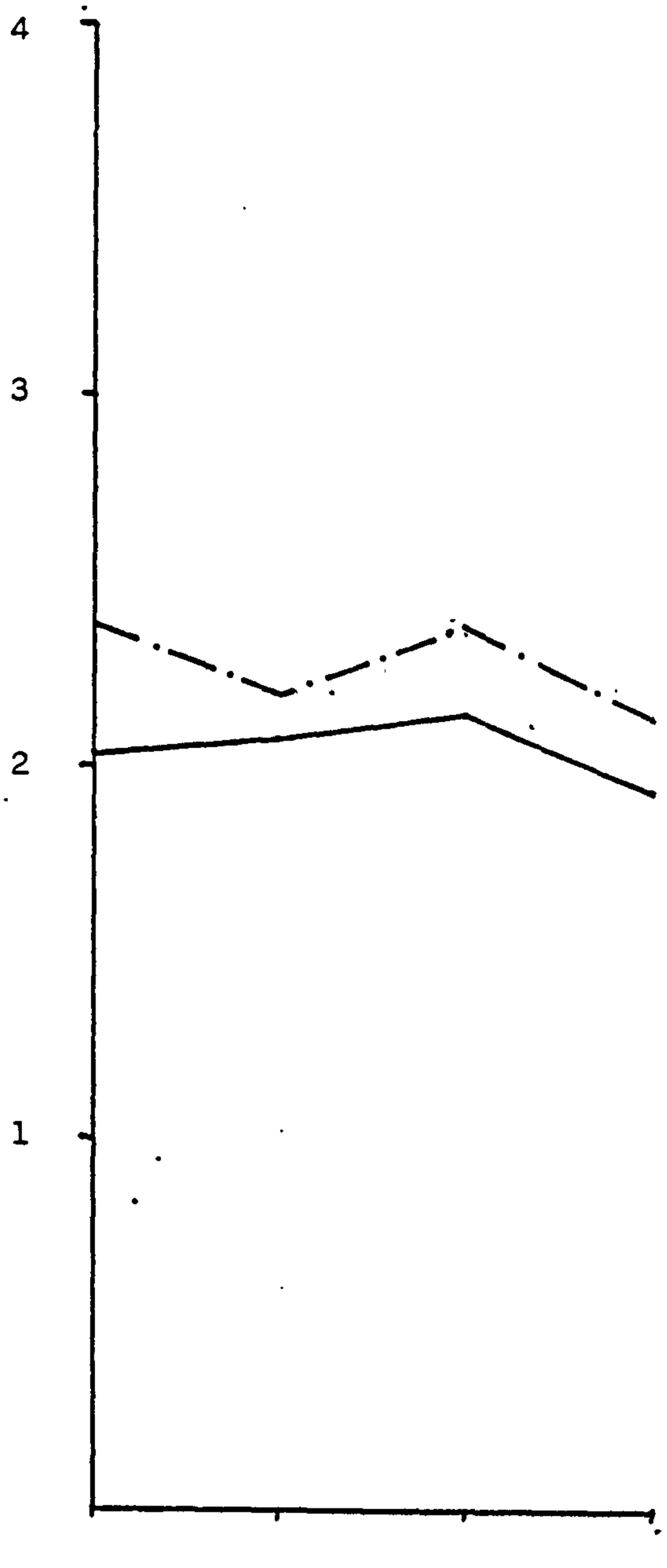


Fig 6:3 Mean population per room

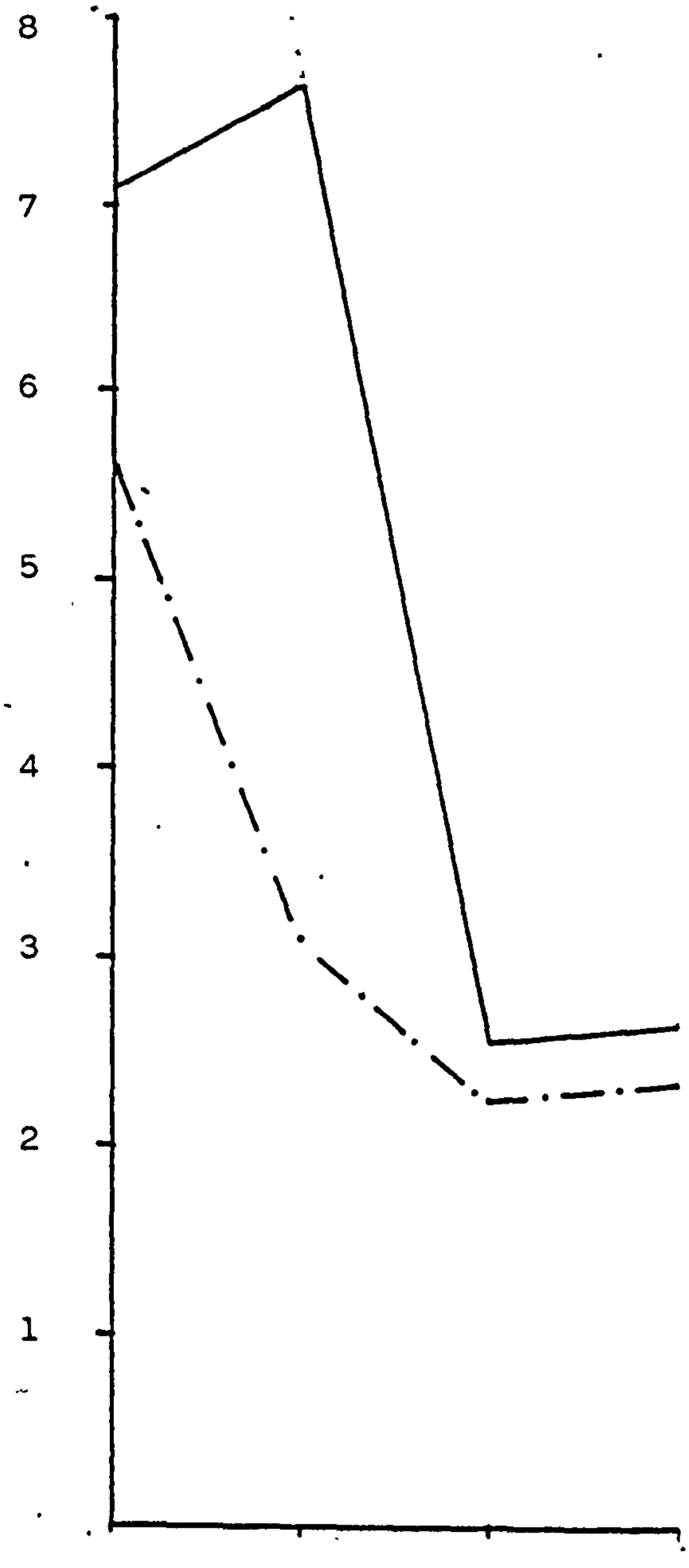


Fig 6:4 Mean number of rooms per house

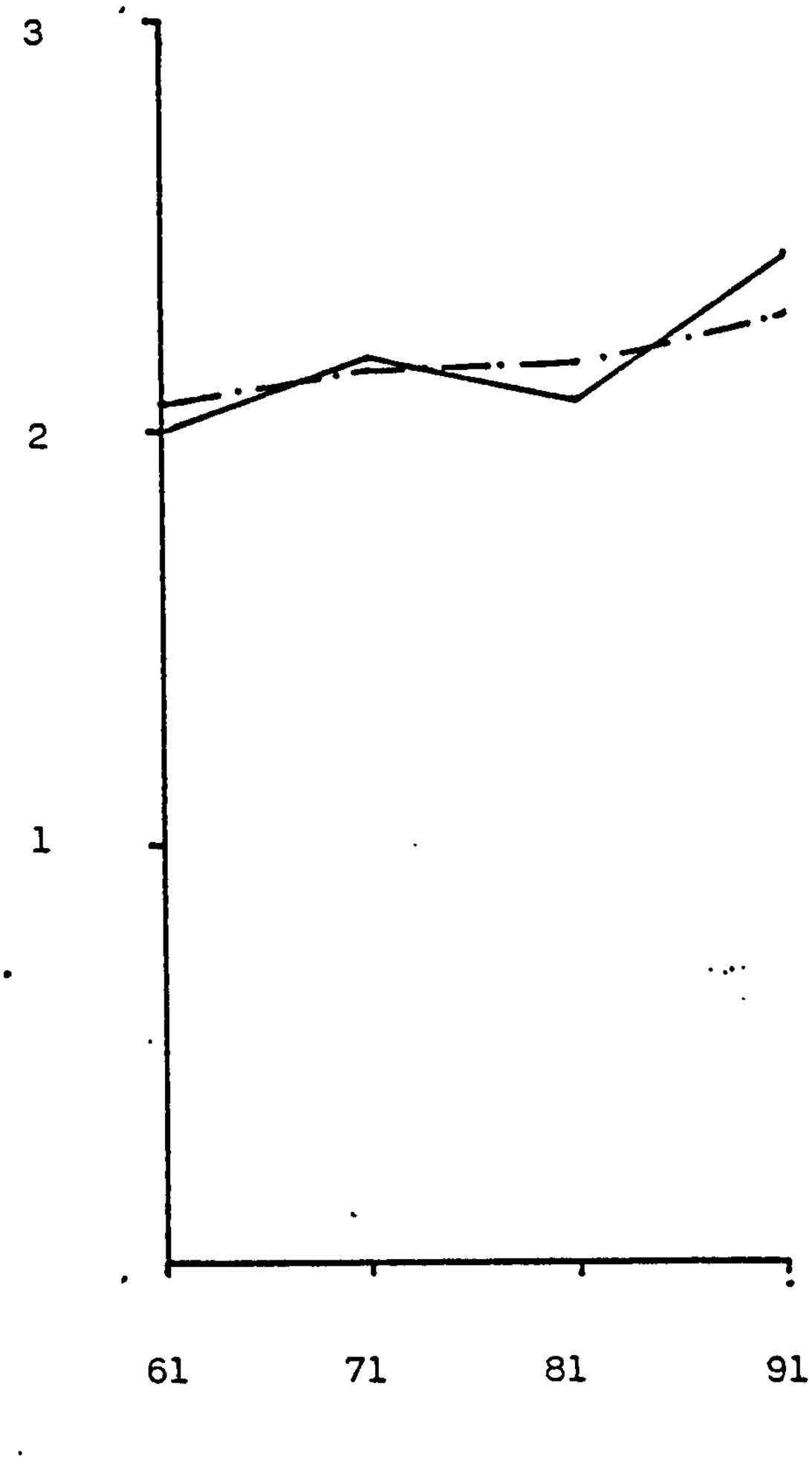


Fig 6:5 Mean numbers of rooms per c.r.g. (family)

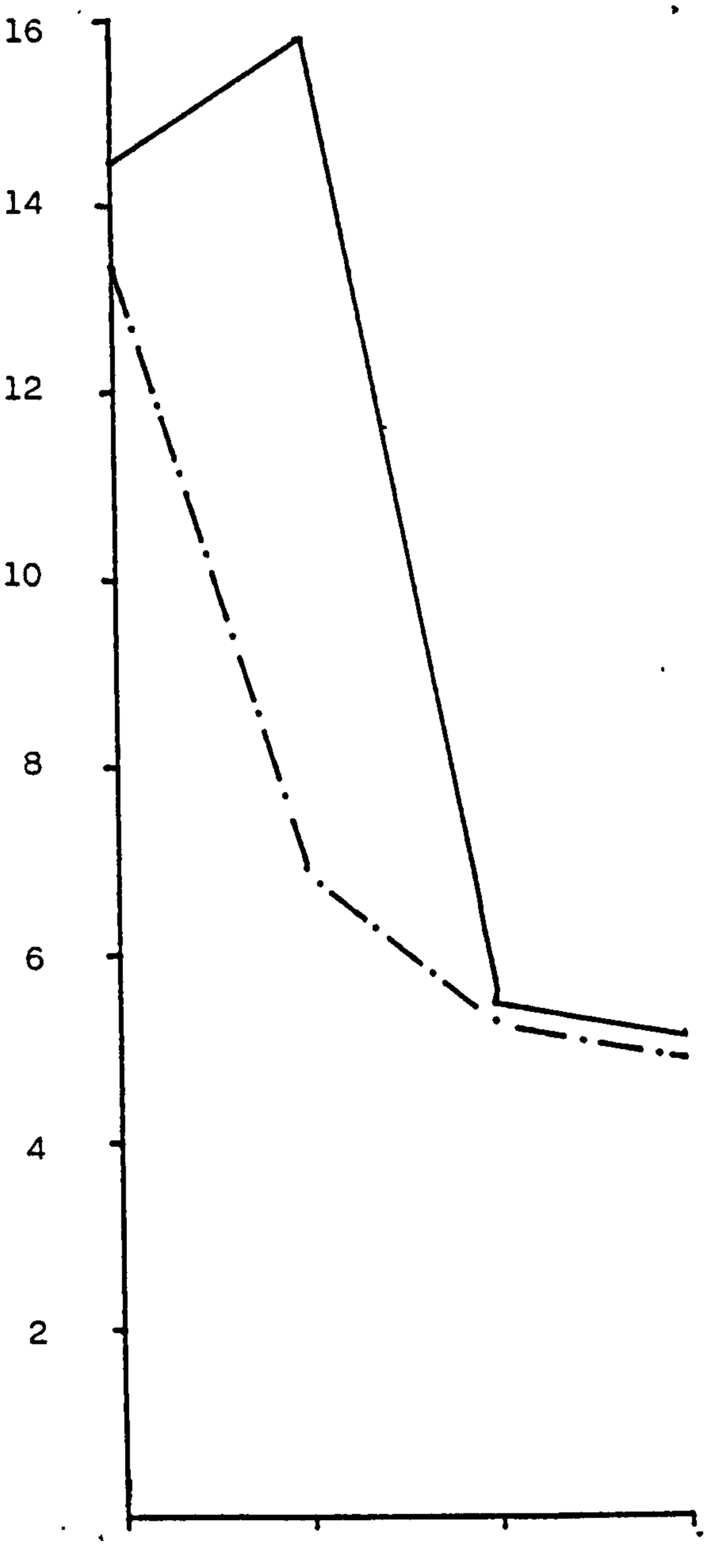


Fig 6:6 Mean population per house

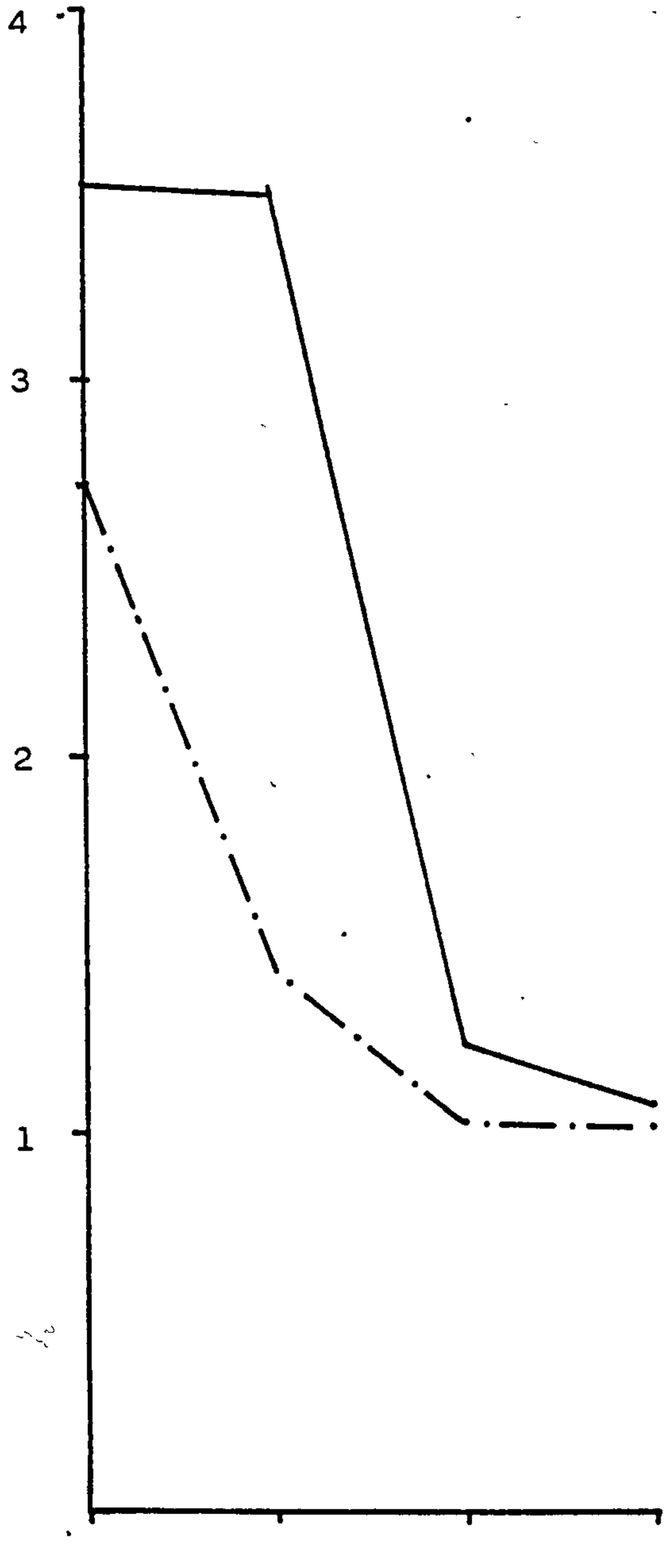


Fig 6:7 Mean number of c.r.g.'s (families) per house

EXPLANATION OF TABLES AND GRAPHS

Figures 6:4, 6:6 and 6:7 which deal with the 'house' as a basic unit of measurement require some initial explanation, as differences, especially through time, appear to be unbelievably great. The major reason for this is undoubtedly the enumerators' confusion over the definition of 'house'. This subject is dealt with at more length in Chapter 4 and it is sufficient to state here that the definition which they were given changed, certainly after 1871. Prior to this date a whole tenement 'close' may have been considered as one house, whereas after this date each individual flat was considered as a house. This was most probably the situation in Dumbarton after 1871, but the drastic decline in rooms, population and families in the Vale of Leven figures from 1861 to 1871, indicate that the change in definition occurred there immediately prior to the 1871 census rather than prior to the 1881 census. Nor does this seem to be the whole story, the Vale of Leven's figures for 1871 still appear to be at variance with the situation in the succeeding two decades. For example, it is most unlikely that, using a consistent definition, while the population rose by c 3100 in the 1871-81 period, the number of rooms per house would drop by 0.87, the population per house would drop by 1.53, the number of families per house would drop by 0.41, while family size, number of rooms per family and the number of people per room all rose. This could only be achieved by a large scale house building programme; for which there is no evidence.

Obviously the definition of 'house' in the Vale of Leven had been changed for the 1871 census, but further tightened up for the 1881 census. This greatly limits the usefulness of Figures 6:4, 6:6 and 6:7 but for the years 1881 and 1891 they show that Dumbarton had on average more rooms, people and more families per house than the Vale of Leven. These facts in themselves help to explain the nature of the confusion over 'house' and the differences in the definition applied to these settlements. A house would be easier to define in the Vale of Leven due to the nature of the

accommodation; this is borne out by examination of the 1st and 2nd Editions of the Ordnance Survey maps for this area (Scale 1:2500). Many of the houses in the Vale of Leven were purpose built workers houses, often no more than two storeys high rather like the common English terrace rows. When additions were planned, the tendency was to build outwards from the centre of the town, along the main roads and streets. There was little, if any, random infilling of backland plots. In contrast Dumbarton's mediaeval core consisted of piecemeal developments, there were three to four storey tenements and long burgage plots choked with outhouses and later additions to the rear of the properties fronting the street. (See Figure 6:8). In short the building density was far greater than in the Vale of Leven, and for the enumerators, far more confusing.

Figure 6:1 (row (i) on the table) and Figure 6:2 show the fluctuation in family, or more properly co-residing group (crg) size. Interpretation of the underlying causes of crg size variations is by no means always straightforward. An increase in crg size suggests an increase in boarding, extended families and possibly less out-migration by young adults. Two diametrically opposed reasons can be suggested for this increase, thus:

a. In an economic 'boom' in-migration would occur, young people would be less likely to leave the area in search of work. Such measures may increase the average crg size.

b. Economic constraints may force people to extend families, to stay at home and to take in lodgers thus raising the average crg size.

Both of these possibilities could be correct for different locations or at different times, for they are not independent and rely on other factors such as available housing stock and the extent to which the majority of people, benefit from the boom, or

suffer in the slump.

In the Vale of Leven and Dumbarton, the former explanation is more plausible as there is a positive correlation betweem crg size and economic well being. This is probably due to the inability of the available housing stock to meet the demand from the growing population. In the Vale where the crg were consistently bigger, lower wages and a less stable industry possibly led to larger crgs with more wage earners per household unit.

Figure 6:5 showing the average number of rooms per family exhibits the least variation between Dumbarton and the Vale of Leven over the 1861 to 1891 period. In 1861 and 1881 the Vale of Leven had slightly more rooms per family, on average, whereas in 1871 and 1891 Dumbarton had the higher average. Yet over the period, the number of people per room was consistently higher in the Vale of Leven. This is a product of the larger crg sizes in the Vale, not of poorer housing conditions, per se. These figures suggest that housing standards were lower, that is, were more cramped in the Vale of Leven, but death rates were lower here than in Dumbarton. If the poor living conditions which were indicative of high death rates in Glasgow (Gibb 1983; Chapter 6) have similar correlations here, then two factors may have contributed to Dumbarton's higher death rates. Firstly, room sizes may have been smaller in Dumbarton, which exhibits a higher multiple occupancy rate than the Vale of Leven over this period. There were older, and more probably more 'made down' apartments in Dumbarton. Secondly, and most certainly, housing and population densities were much higher in Dumbarton, irrespective of statistics which deal with the 'house' as the largest unit of analysis as those above do.

To summarise; the Vale of Leven had a consistently larger crg size and more people per room than Dumbarton, which had larger houses but higher multiple occupancy rates.

Figures 6:3 and 6:5 may provide some clues to accommodation conditions, as they show the average population per room and the average number of rooms per co-residing group respectively. The average population per room in the Vale was higher than that of Dumbarton throughout the period. In the Vale the population per room trend closely followed trends in family size. Thus, when the family size rose the number of people per room rose and when family size declined the number of people per room followed suit. In Dumbarton housing conditions appear to have been more variable. Hence when the family size rose by almost 0.5 (of an individual, not as a fraction of the previous mean family size) between 1861 and 1871, the average population per room only rose by 0.03, suggesting an improvement in the housing stock over this decade. Likewise in the 1881 to 1891 decade, when very real improvements to conditions were experienced in both Dumbarton and the Vale of Leven, the average size of Dumbarton's crgs rose by 0.31 but the number of people per room went down by 0.21, representing a substantial divergence, an indication of very real advances in housing provision at a time when the overall population, and crg sizes were rising.

The improvements in Dumbarton are largely attributable to the building of Dennystown after 1861 and Knoxland to the west of the burgh, after 1881, along with a steady growth of middle class residences on the urban fringe.

The larger crg size in the Vale may have been conditioned by less stable economic circumstances and lower wage rates (Campbell 1980). Ironically higher wage rates and a more secure economic micro-climate did not result in a better quality of life in Dumbarton. Numerically, conditions within houses may appear to have been better than in the Vale of Leven, but the houses themselves were far more densely packed in Dumbarton and the resulting population densities were unacceptably high, if sanitation was to triumph and infectious diseases were to be kept at bay.

CHAPTER 7.

RESEARCH DESIGN: CODING, BIRTHPLACE, OCCUPATIONAL SOCIAL GROUPS AND FORMULAE

Each person in the sample was assigned a 25 digit number as Figure 7:1 shows:

COLUMNS	DESCRIPTION (FIG 7:1)
1- 2	Enumeration District
3- 5	Schedule Number
6- 8	Address; Number of House
9-10	Address; Street
11-12	Relation to Head of Household
13-14	Age
15	Sex
16-19	Occupational Grouping
20	Social Status Grouping (A)
21-22	Social Status Grouping (B)
23-25	Birthplace

The details of codes used are to be found in appendices 1, 2, 3 and 4.

Columns 1-15 presented no problems of classification nor subjectivity. The most contentious areas concern occupational and, more especially, the social status classification used.

OCCUPATIONAL CLASSIFICATION

Members of the working population were assigned to one of nine major occupational groupings according to Booth's classification (See Armstrong in Wrigley 1972 Pp 255-281)..

Digits 16 and 17 cover:

Agriculture

Mining

Building

Manufacturing

Transport

Dealing

Industrial Service

Public Service & Professional Sector

Domestic Service

Digits 18 and 19 indicate sub-groupings within the nine major groups to allow such distinction as between shipyard workers and printfield workers, the two biggest groups within the manufacturing sector.

The data contained in the cebs and the extensive nature of the classification allows precise categorisation in most cases. However, in some instances it is difficult to assign a person to an exact sub-group, due largely to job descriptions in the cebs which define the nature of the work without stating the industry in which it is pursued; for example in some cases the information 'engine fitter' is given and in others, more helpfully 'engine fitter in printworks' or 'engine fitter in shipyard'.

The procedures followed when the information is deficient or ambiguous are outlined below:

a. Engine fitters and those working with machinery where the place of work is not stated were assigned to the manufacturing/machinery group.

b. Painters, Joiners and other building operatives are assigned to the 'Building' group unless otherwise stated, for example 'Joiner in Shipyard'.

c. Dual occupations were a rarity, but where these occurred the person was assigned to the first named and presumably more important occupation mentioned eg 'Ship and House' Painter was regarded as a shipyard worker, whereas a 'House and Ship Painter' was regarded as a building operative.

d. Bakers were regarded as manufacturers rather than dealers.

e. Scholars and children, usually daughters, who worked in the parental home as housekeepers, were assigned no occupation.

f. Those engaged in part-time work, mainly children, were assigned to the appropriate occupational group and were thus regarded as being in employment.

g. Property owners, annuitants, pensioners, paupers and those where the statement 'Unemployed' or no occupation was registered were entered in a residual population group.

h. Domestic nurses living with a family were regarded as domestic servants. Nurses outwith this situation were regarded as belonging to the 'Public Service and Professional Sector' medical sub-group.

The effect of procedures (a) and (b) will be to underestimate the numbers working in the major industries of shipbuilding and printworking. This is unavoidable but the effect is minimised

by the small numbers involved and the lack of alternative employment. Thus most of those in category (a) were most probably attached to one or other of the major industrial employers.

SOCIAL STATUS GROUPINGS

The social status of persons, as determined by their occupation is recorded under two different schemes:

a. Armstrong's classification (Armstrong 1974) and;

b. Anderson's classification (Anderson 1972).

ARMSTRONG'S CLASSIFICATION	ANDERSON'S CLASSIFICATION
1. Professional	1. Professional & Managerial
2. Intermediate	2. Clerical
3. Skilled	3. Trade
4. Semi-Skilled	4. Higher Factory
5. Unskilled	5. Artisan
	6. Lower Factory
	7. Labourer etc
	8. Hand Loom Weaver
	9. Unclassified
	10. Not Employed

Armstrong's scheme was used to provide comparability with other studies, despite its deficiences with respect to 19th century data. Anderson's scheme, with minor alterations, was regarded as one which most clearly pertains to the industrial situation as

it was in the Dumbarton, Vale of Leven area over the second half of the 19th century. In Anderson's scheme 'trading' was taken, in this case, to mean shopkeeping and dealing. There were few, if any hand loom weavers in the Dumbarton, Vale of Leven area but people of similar status were to be found in the dressmaking and millinery trades where piece and casual work were regularly employed. Number eight in this scheme was re-designated as 'Dressmaking'.

The reservations expressed in Chapter 2 over the use of 19th century occupational data to determine social status are confirmed by the difficulties of assigning certain groups of workers to appropriate status categories. Particular problems are caused by those involved in trading and dealing; that is shopkeepers, various dealers in commodities such as coal and spirits and those involved in running small businesses such as joiners, blacksmiths and painters. Obviously the status of the owners of such concerns is different from those they employ. The efficient classification scheme should enable the difference to be noted. In many cases if the person is an employer there will be an indication to that effect, but entries such as 'draper' or 'coal merchant' are not unambiguous and as enumeration practices vary so greatly, no distinction between employed and employer can be made in these cases. Drapers, coal merchants and shopkeepers are regarded here as 'Intermediate' in Armstrong's scheme and in 'Trade' under Anderson's classification. Shop and other assistants are regarded as having 'Labourer' status under both schemes.

Fortunately the areas where the status is easiest to assign are for those employed in the major manufacturing concerns for the Leven Valley; printworking, shipbuilding and their associated ancillary industries.

THE USE OF SOCIAL STATUS LABELS AND THE EFFICACY OF DERIVED SOCIAL AREAS

While there have been differences of opinion over classification schemes (see Dyos 1968 Pp 146-153) and difficulties in assigning individuals to social status groups, perhaps the greatest problems have arisen over the design of research projects and the interpretation of resultant spatial patterns.

The problems over the sampling mesh or scale have been dealt with in Chapter 3. However the sampling method can also influence the results. In this sample it is not merely household heads who are being considered, but all sections of the population. Subsequently working sons, daughters, other relatives and lodgers must be assigned a status label too. The status of children was, more often than not, close to that of their parents. However status was allocated on the basis of the occupation being followed by each individual and was not determined by the status of the household head.

Many studies (see for example Royle 1977) have used the household head's occupation as the prime determinant of social status. Subsequent assumptions have been made on the nature and formation of social areas, while little consideration has been given to the cumulative earning power of all those employed in a household. Whether or not the status of a household is enhanced by the earning power of members other than the household head is a matter for debate. But increased earning power, albeit temporary, will most surely widen the residential choices which that family will have. Furthermore, other studies have shown that Victorian industrial workers tended to move frequently, in what was often a very fluid housing market, especially in the rented sector (see for example Holmes 1973). Thus, a family would tailor their residential choice to meet, often very temporary, changes in economic circumstances. Osborne (1980) has demonstrated that Dumbarton was no exception to such trends. For 1871 he recorded only 11 out of 160 household heads who were present in a part of Dennystoun at the 1861 census.

Indeed, he suggests that the Denny family's intervention in the housing market was specifically designed to encourage home ownership among skilled workers, therefore securing the services of such workers when they were required.

Residential choice was not merely based on the social status of the household head but on a number of what could be termed 'internal factors' which affect each co-residing group or family individually, and 'external factors' which are relevant to the community as a whole. The former include family size, stage in the life-cycle, cumulative earning power and incidence of boarders, while the latter encompass the historical development and growth of a town, its housing stock and its industries. Straddling both groups are occupation and wages which affect some internal factors, but are greatly influenced by many of the external factors.

As the major influence of occupation on status is acknowledged, any consideration of social areas must include examination of the local industrial and occupational structure as having a vital role in the formation of such areas. In other words it is not enough to show that a social area has emerged, nor to try to explain that emergence in terms of, for example, the stage development of cities, where modernity is characterised by large, homogenous, residentially segregated social areas, without close inspection of the importance of key industries and occupations in shaping that emergence.

For example, on the basis of social status alone, two areas may appear over time to take on similar characteristics. However one area might be the result of ecological filtering where occupations are very different but the resulting status is the same, whereas the second may be the result of direct or indirect interference by an employer or group of employers. The result in the latter case is an area where the social status is the same because many of the occupations followed by the people are very similar and the industries they work in are close at hand. Social areas of this type may appear, on the basis of social status alone, to be alike. As their emergence has been for

different reasons they cannot necessarily be classed as part of the same emergence process.

Any ordering or ranking discussed here is subjective, and the fact that it is difficult to assign social status labels to certain occupational groups, must instil an awareness that 20th century man may be imposing an order which may not have been recognised or did not exist [1].

These reservations do not prevent observations on social status, segregation and the development of social areas. What is limited are direct and unequivocal comparisons with other towns and cities which have been researched elsewhere. Despite these problems Richard Dennis (1984) has been successful in drawing the findings of numerous writers, each it seems with a different techniques of analysis, into a coherent treatise on current thought about 19th century cities.

Undoubtedly, processes which occurred within the present study area can be measured and contrasted through time and space, but the difficulties are in comparison and interpretation. Using two social classification schemes may improve clarification, promote understanding of the relationship between such schemes and highlight the pitfalls caused by a lack of agreed procedures.

The following sections describe the main formulae employed in this study and explains their use.

MEASURING SEGREGATION

There are three basic measurements of segregation these delimit:

a. the contrasts or parallels in the distribution of two groups;

b. the distinctiveness of a group in its distribution throughout the whole population and;

c. the over-representation or under-representation of a group in a specific area.

These are measured respectively by:

a. The Index of Dissimilarity where

$$1DXY = \frac{E\ (Xi - Yi)}{2}$$

where Xi represents the percentage of the X population in the ith area, Yi represents the percentage of the Y population in the ith area. Values range from 0, where the two populations have exactly the same spatial distributions, to 100 where the distributions are completely different.

b. The Index of Segregation, where

$$1SXY = \frac{1DXY}{1 - EYi/Ei}$$

1DXY is the index of dissimilarity between the total population X and the sub-group Y. EYi represents the total

number of the subgroup Y in the settlement and EXi is the total population of the settlement. Values are between 0 and 100, the closer a value is to 100 the greater is the degree of segregation of subgroup Y.

c. Location Quotient is simply derived by using the following formula:

$$\frac{\text{Percentage of subgroup X in area i}}{\text{Percentage of total population in area i}}$$

A value of 1 would show that the percentage of subgroup X in area i was in exact proportion to the percentage of the total population living in area i. A value less than 1 indicates under-representation of subgroup X, whereas a value greater than 1 indicates an over-representation of subgroup X.

For a concise explanation of the above formula and some examples of their use see J R Short (1980) Urban Data Sources.

THE USE OF SEGREGATION INDICATORS IN THIS STUDY

As indicated earlier, a study of groups defined by birthplace is probably more valuable when using the census as a source, than relying too heavily on definitions of social status which cannot be derived with complete confidence using occupational categories alone.

This does not exclude an examination of social status distribution within a town; it merely suggests that the results must be treated with caution when they are compared to findings for other settlements made elsewhere. Conversely, comparability across a study area, and of settlements through a limited period of time,

might be expected to yield an accurate picture of contrast and change when the system of classification is consistent. Furthermore, it will be possible to make some tentative comparisons between the role of ethnicity and the role of social status in influencing the residential differentiation process in towns.

MEASURING NET-MIGRATION

Simply put,an age-specific population where additions to that population can only be made by in-migration and where exclusion can only occur through death or out-migration can be compared over time. If the number of expected deaths can be accurately accounted for, then the expected survivorship figure can be compared to the actual figure; a shortfall indicates net out-migration and a higher than expected figure net in-migration. It cannot account for the turnover of population in the intervening period nor can it compare the numbers moving into an area with the numbers moving out.

Lamont (1976) explains Zachariah's 'census survival ratio' thus:

> 'the ratio of a "closed" population (exit by death only) aged X at a given census to the population aged x-h at a census h years earlier. This ratio is multiplied by the population aged x-h of sub-areas at the first census to yield expected survivors. This figure, compared with the actual population in the cohort x, gives an estimate of net migration' see Zachariah (1962).

In Chapter 3 the employment of this type of method was discussed; concluding that at inter-county level, or macro-scale, it is a useful method of delimiting net-migration flows. Attempting to learn more about population movement within towns and over short distances, that is, at the micro-scale, was much less fruitful. Record linkage (involving tracing individuals

through preceeding and succeeding censuses) has proved very wasteful in terms of the number of persons traced and the time taken to yield such inconclusive results. When so few people are traced it is difficult to make any confident pronouncements about the reasons for such moves. Indeed, the whole point in charting these movements has been called into question (Anderson 1982). Instead, an investigation into migration at the mezo-scale, as it affects individual settlements within a migration field, was suggested as a possible way forward.

Using information from the cebs can determine whether a person is an in-migrant or is locally born. When this has been done for groups within the 'mobile' age cohorts, much the same method as is described above can be applied. In this case not to the whole mass of population, but to two distinct groups; the 'migrants' and the 'locals'. While this dichotomy might be regarded as a false one, some locals perhaps being returnees who had worked in other places and some migrants, who though born elsewhere, moved to the area in question at an early age and remained there, what is important here is the way in which either group can be entered. The 'local' group can be entered only at birth [1], exit is by death or out-migration; whereas the 'migrant' group can only be entered by in-migration, exit again is by death or out-migration. By comparing the numbers in each group in the mobile age cohorts over a number of censuses something of the nature of in and out-migration to a specific area will be revealed.

The formula devised here to measure such net migration is shown below:

For a comparison of figures at Census Year x and Census Year x + 10

i. $Pli - \left(Pli \times \frac{Di + Dj}{2}\right) =$ Expected Survivors of Pli at x + 10

ii. $Pmi - \left(Pmi \times \frac{Di + Dj}{2}\right) =$ Expected Survivors of Pmi at x + 10

Where: Pli = Local born population in age cohort i

Pmi = Migrant born population in age cohort i

Di = Age specific death rate; 10 year mean for age cohort i in the years x to x + 10

Dj = age specific death rate; 10 year mean for age cohort j (the older adjacent age cohort to i)

In (i) above the numbers are compared to the actual survivors, the number of locals present is usually less [2] than expected. The deficit is regarded as being the result of out-migration.

In (ii) above, the number can be compared to the actual number present which in this case represents the balance between in and out-migration.

The problem of 'returnees' apart, there are a number of other points which have to be considered in calculating net-migration in this way:

a. Group 'm' is likely to be more volatile; that is, with the likelihood of less attachment to the area they are in, and the experience of migration behind them they are more liable to move than group 'l'. Keeping in mind the comments made above on the local/migrant dichotomy which may mean that the difference in behaviour between the two groups is less than stark.

b. In most instances death rates have to be estimated, rarely were they recorded for all but the biggest towns and cities; and here the mean figure will mark undoubted internal variations. In this case, the figures were estimated as a percentage of the local death rate for each of the mobile age cohorts. This information was derived from the Registrar Generals Annual Reports which, after 1871, gave the

number of age specific deaths 'for the small town districts of Dumbarton(shire)'. Therefore despite slight differences in the overall death rates of Dumbarton and the Vale of Leven, the proportion of deaths within an individual age cohort was, for the purposes of estimating survivorship rates, regarded as being the same across the settlements in this study. These proportions of the overall death rate of course varied from cohort to cohort.

Without small area statistics and separate rates for migrant and local people there will be inaccuracies in this type of calculation. There will be definite differences across social classes, which in turn may be under or over-represented in migrant communities. In mitigation the mobile age groups are specifically those ones which exclude the very young and the old, where mortality was highest. Here, data for the years 1872, 1881 and 1891 showed that in the five year age cohorts, from 15 to 19 upto 40 to 44, the deaths per cohort as a percentage of the total death rate were never above 4.29% nor below 2.51%. The total percentage of deaths accounted for by the whole group from ages 15 to 44 ranged from 18.23% to 20.9% of the overall death rate. Therefore even in a year when the number of deaths in an individual five year cohort was high and the overall death rate was high at, for example, $\frac{26}{1000}$ or 2.6%, then the number of deaths in that cohort per 1000 of the population would be:

$$\frac{4.29}{100} \quad x \quad 26 \quad = \quad 1.115$$

Over a ten year period if the high overall and cohort death rates were maintained then there would be 11.15 deaths per 1000 of the population. Aggregation of this sort can accentuate inaccuracies, but here three death rates will be considered for each cohort representing upper and lower extremes and one based on the actual figures derived from the Registrar Generals Reports.

EXAMPLES IN THE USE OF THIS METHOD OF MEASURING NET-MIGRATION

Despite the flaws in the method described above, which stem primarily from incomplete data, the advantages of using such measurements appear to outweigh the disadvantages. The importance of this method in examining net-migration lies in the comparison of figures for 'migrant' and 'local' groups. The following examples gleaned from a pilot study, but with the numbers simplified, illustrate the way in which it is used here:

i.

	Pli at census year x	=	100
Expected	Plj at census year x + 10	=	c95
Actual	Plj at census year x + 10	=	90

Suggesting an out-migration of the order of five from this group.

At the same census:

	Pmi at census year x	=	100
Expected	Pmj at census year x + 10	=	c95
Actual	Pmj at census year x + 10	=	80

Suggesting an net out-migration from the group of the order of 15.

Thus, over the two groups there was an overall out-migration of the order of 20.

However it is not always as neat as the example above, and it is in cases like this where splitting the population into 'migrant' and 'local' is of most use. Consider the case where overall the drop in population within a cohort over the census interval approximates to the expected figure eg:

Overall population in cohort i at census x = 200
Expected population in cohort j at census x + 10 = c190
Actual population in cohort j at census x + 10 = 190

The conclusion being that the numbers leaving were balanced by the numbers arriving. This over simplifies the reality, and a deeper insight is gained by following the method in example (i).

ii. Pli at census year x = 100
Expected Plj at census year x + 10 = c95
Actual Plj at census year x + 10 = 85

Suggesting an out-migration of the order of 10.

Pmi at census year x = 100
Expected Pmj at census year x + 10 = c95
Actual Pmj at census year x + 10 = 105

Suggesting a net in-migration of 10

This leads to the conclusion that substantial numbers of local people had left the area along with substantial numbers of migrants, but this loss was compensated for by an influx of new migrants. Instead of a population of 190 composed of c95 locals and c95 migrants. This cohort at year x + 10 had c85 locals but 105 migrants.

Such a result can have important consequences for residential segregation and can reveal much about the industrial situation in an area when occupational change in the population can be gauged. This takes knowledge of net-migration figures beyond mere gain and loss and allows some insight into the dynamics of the migration process operating over a period of time especially when different age cohorts are compared and sex ratios are considered.

NOTES

1. For a full discussion of current thinking on the emergence and nature of social areas see Johnson and Pooley (1982) Chapters 8, 9, 10 and 11.

CHAPTER 8: THE VALE OF LEVEN: DEMOGRAPHIC, OCCUPATIONAL AND SOCIAL STRUCTURE

DEMOGRAPHIC STRUCTURE

In spite of the volatile nature of the printing and dyeing industry, the population of the Vale of Leven almost doubled its 1861 total in the succeeding thirty years.

In-migration and natural growth were satisfying the demands of industry, and the villages, Alexandria in particular, continued to expand physically to cope with this increase. Progress in Bonhill and Renton was not so unequivocal. Bonhill had Burn Street, which its name implied, was close to a stream. Here the connection was more direct as the burn in question ran down the middle of the street (see Fig 1:3) separating one row of houses from the other. It became an open sewer and the preponderance of fever cases reported in this street alone was no coincidence (D H 15 November 1862; L H 17 September 1864). Conditions in Renton were definitely poorer than in the rest of the valley. Separate death rate statistics published for the latter portion of this period show that its rates were more akin to those of Dumbarton than to the neighbouring parish of Bonhill which contained Alexandria, Bonhill village and Jamestown. The rurality of Bonhill parish, the small partly planned villages, and the ease with which expansion could be directed, all served to keep death rates at around seventeen or eighteen per thousand.

It is not intended to delve into the minutiae of the age/sex structure of the Vale of Leven's population, but to provide a broad over-view. To facilitate this the population has been put into four main life-cycle stage categories. While it is acknowledged that the divisions between categories are by no means rigid, it is a convenient way in which to view the population structure over time, and it should highlight the main elements of stability and change.

The categories are:

a. Children of 14 years and under, characterised by a large number of children born locally.

b. Younger mobile (family). Aged between 15 and 29, this group tend to contain the migrants and potential migrants. As people move through this phase they are increasingly likely to have family commitments as they marry and have children.

c. Older family (mobile). Aged between 30 and 44, the major concerns of this group are with the family and as they move through this stage the importance of migration (if not intra-urban mobility) wanes.

d. Older sedentary. Aged 44 years and over, these people are characterised chiefly by immobility and ageing, although again, intra-urban mobility may not have been diminished.

The population pyramid exhibited a base heavy appearance indicative of high birth and infant mortality rates, but also of a young and rapidly growing population. Male births were marginally ahead of female births in the earlier census years, with the trend reversed in 1881 and 1891. Overall after 1861 the numbers of females in the sample outnumbered males.

In the middle life-cycle stages the effects of differential migration are apparent (see Fig 8:1). Job opportunities for females were more plentiful than in most industrial towns and this trend heightened as the century wore on (Docherty 1982). At no point in the four census years did the male population in the mobile groups exceed that of the females. Differences were starker in the younger mobile (family) group, particularly in 1871 and 1891, although the biggest proportion of the population in this group occurred in 1881 when c 34% of the total sample population were in this fifteen year age cohort. The effects of higher male mortality served to maintain the differential into old age.

Figure 8:1 - Vale of Leven: Age/Sex Structure

		CHILDREN (0-14 YEARS)	YOUNGER MOBILE (FAMILY): (15-29 YEARS)	OLDER FAMILY (MOBILE): (30-44 YEARS)	OLDER SEDENTARY: 44+	TOTALS	
1861	Male	159 127 106 392 (19.9)	117 86 83 286 (14.5)	57 41 54 152 (7.7)	35 36 30 30 13 15 159 (8.0)	989	1973
	Female	125 105 114 344 (17.4)	108 114 69 291 (14.7)	63 55 57 175 (8.9)	42 38 31 31 11 21 174 (8.8)	984	
1871	Male	187 151 144 482 (19.4)	126 100 79 305 (12.3)	69 70 55 194 (7.8)	43 35 30 28 16 26 178 (7.2)	1159	2473
	Female	156 153 152 461 (18.6)	157 136 108 401 (16.2)	73 62 82 217 (8.8)	54 49 42 39 22 29 235 (9.5)	1314	
1881	Male	154 143 124 421 (16.7)	152 160 93 405 (16.1)	64 51 51 166 (6.6)	58 46 34 26 16 13 193 (7.7)	1185	2517
	Female	159 123 145 427 (17.0)	174 188 97 459 (18.2)	71 61 65 197 (7.8)	59 52 49 34 23 22 249 (9.9)	1332	
1891	Male	140 164 148 452 (18.1)	135 91 86 312 (12.5)	72 68 64 204 (8.1)	39 37 33 20 15 22 166 (6.6)	1134	2503
	Female	161 160 164 485 (19.4)	167 139 98 404 (16.1)	95 81 54 230 (9.2)	62 62 40 33 24 29 250 (10.0)	1369	

Numbers on upper line of each box represents the totals in the sample per 5 year age cohort (the last number in the 'older sedentary' box represents those aged 70 and over).

MALE OCCUPATIONS - (SEE FIGURE 8:2)

It is axiomatic that factory villages built upon the foundations of the bleach, print and dye industry should show a heavy dependence on the same. The employment base was predictably narrow, and in 1861 precariously so, when 61% of the employed males in the sample were engaged in this industry, with no other sector of employment coming remotely near this figure. Those involved in the building trades accounted for 6.7%, general labourers 3.9% and tailors, shoemakers and other clothing workers around 3.8%. Of the total male population around 35% were not employed (these were, mainly children under 14).

The 'not employed' proportion of the population was similar ten years later, when it may have been expected to be bigger, as in the intervening period the American Civil War (1861-1865) had provided a severe jolt to the Vale's economy; but this is to interpret 19th century phenomena with 20th century perceptions of economy and employment.

Firstly, the population was more mobile than today's. In a world where market forces dominated and support from the parish was grossly inadequate, people faced stark choices when industry struggled; adapt or move. Many took the latter course, in this case often going to other textile dominated towns, like Paisley, in the West of Scotland where familiar types of work might be found. Secondly, others descended into casual employment, as there was no question of industrialists retaining a labour force which they felt could not be justified given the 'state of trade'. Violent fluctuations in the numbers employed occurred as successive 'booms' and 'slumps' were encountered. Industrial Capitalism in its climax phase had little room for retaining labour which may be needed in future, preferring instead to hire and fire as often very temporary, circumstances dictated. As Rodger (1985) has stated, the Scottish economy was no more than a low wage economy and any difficulties which were encountered were placed firmly in the laps of employees in the form of wage cuts, reductions in hours and the shedding of labour. Thus,

Figure 8:2 - Selected Male Occupational Groupings in the Vale of Leven; expressed as a percentage of the Employed Male Population in each sample year

	CENSUS YEAR			
OCCUPATIONAL GROUPING	1861	1871	1881	1891
Bleaching, Printing & Dyeing	61	48.8	58.3	52.2
Shipbuilding	2.5	3.4	2.9	3.9
Iron & Steel Trades	2.7	3.4	2.5	2.3
Machinery	0.8	1.4	1.5	2.2
Other Manufacturing	1.9	2.6	2.5	1.8
Agriculture	0.9	1.8	1.6	1.0
Mining & Quarrying	1.1	1.1	0.5	0.4
General Labouring	3.9	7.1	6.2	5.5
Building Trades	6.7	8.1	8.0	7.9
Public & Professional	2.7	1.8	1.4	2.9
No Job (as a percentage of total male population)	35.6	35.2	33.0	38.9

many who gave their occupation as 'printworker' may have found that their hours of employment were reduced and that part-time or short-time working was more prevalent than in times of prosperity.

By 1871 the percentage of males working in the printworks had dropped by over 12% of the total number employed according to the sample population, to 48.8 (with approximately the same proportion of the male population in the 'not employed' sector as in 1861). It is clear that some diversification had taken place, but there were no obvious alternatives. There are indications that some may have commuted to Dumbarton to work in the more successful heavy industries based there. However, it seems that most slack was taken up by a drift into the casual employment sector, the percentage of men designated as 'general labourer' in the sample rising from 3.9 to 7.1 in the ten years from 1861. This category does not encompass those working in relatively steady employment where the job description would be, for example 'labourer in printworks' or 'stone mason's labourer'. 'General labourer' status implied that any type of work would be considered.

It would be possible to overstate the extent of the setback which industry encountered in this period, after all the population did rise by 532 and therefore the percentage decline in printworkers over this period is accentuated by the fact that there were more workers to be taken account of in the 1871 figures; but working from population totals given in the census reports and comparing the sample estimates of the percentage of people working in printing and dyeing, there would still have been the shedding of c 420 male jobs over the period. What the employers were doing was to switch to the use of cheaper, female labour, probably employing around 140 more women than in 1861. These figures help to confirm a trend recognised over the 1851 to 1871 period by Docherty (1981) using a ten per cent sample of the household schedules. Overall there had been a loss of c 280 jobs of those living in the Vale and working in Printing and Dyeing.

The obvious reason for the slackening of trade was the American Civil War (1861-1865) which restricted cotton supplies, and yet local newspaper reports do not provide much evidence of hardship. Most attention focused on small mill towns such as Duntocher and on the cotton cloth producing areas of Lancashire rather than on the Vale of Leven where the cloth was bleached, dyed and printed.

There was initial trepidation, which the Dumbarton Herald voiced ... 'The dreaded cotton famine ... which the Civil War had led us to anticipate is now being felt' (D H 29 September 1861) and there were further warnings on the subject early in 1862 (D H 2 March 1862; 15 March 1862). However by July of that year the 'paper indicated that problems were more severe in Lancashire than in the Vale of Leven' (D H 12 July 1862; 26 July 1862). By September, printwork owner John Orr Ewing speaking at a meeting in the Alexandria Works stated that there was enough 'grey goods (unbleached cloth) still on hand' but warned that the shortage of cotton and the rising prices which this precipitated did not augur well for the future (D H 27 September 1862).

Possibilities of short-time work in the winter,when the works tended to be less busy under normal circumstances anyway, were mooted in the autumn of 1862 (D H 27 September 1862).

By the spring of 1863 some cautious optimism was being expressed. The people of the villages had been 'pretty well employed' and in the past winter the scarcity of employment 'common in most districts where similar branches of trade are prosecuted was at no time very severely felt' (D H 11 May 1863). This was set against the difficulties of nearby mill villages (D H 20 December 1863) and the emigration prompted by the cotton famine, where, for example, 250 unemployed cotton operatives and their children emigrated to Canada with the help of the Glasgow 'Relief Fund Committee' (D H 25 July 1863).

For the remainder of the War, the general tenor of remarks on the 'State of Trade' were that it was holding up reasonably well considering the difficulties imposed by the Conflict (see for example D H 20 June 1863; 11 June 1864: L H 16 July 1864; 30 July 1864). What is unusual by present day standards is the lack of reference to a decline in the labour force, or at least an end to growth. The decline was small and if it is assumed that is was spread over the first half of the decade when the War was being waged it may not have been dramatic, but the absence of even passing comment implies that the volatility of the labour force, the increase in jobs when the order book was healthy, and the shedding of labour when it was not, was commonplace.

Indeed, the fact that the Ferryfield Works lay idle for the best part of seven years (from 1864 to 1871) and was really only given column space in the local press when it re-opened (L H 4 May 1871) suggests that it was not uncommon for the smaller works to close, usually for short periods when orders were not forthcoming. Clearly, substantial variations in the labour force and population turnover were so typical of the times that they did not merit the interest of the local journalists who expressed surprise in 1871 that the growth of population in Bonhill parish over the previous decade had only been 532 (L H 20 April 1871). There can be little doubt that the depression caused by the War had a more enduring face than local sources realised or printwork proprietors cared to admit.

By 1881 much of the confidence lost in the 1860's had been restored, as had the intensity of male employment at the dyeworks which ran just short of its 1861 total of 61% of the employed males, all the more impressive when the male population had risen by over 2,300 in the decade since 1871. This proportional rise of around 10% in ten years, ensured that other sectors assumed less importance. The relative attractiveness of the heavy industries waned as did other occupations such as those in the clothing trade.

By 1891, while extreme difficulties which resulted in merger, closure and decline were still six or seven years away (Docherty 1985), there was a hint that the printworks were not so buoyant as in 1881, when a high point had been reached, and the Works now engaged around 52% of employed males. In some settlements this may have been the sign of a healthy diversification, but it was not the case here. There were no alternative forms of factory employment, although shipbuilding once again increased its share of employed males. Increases in other sectors of employment were not independent of the printworks. Transport, trading, public and professional services were there to meet the demands of the public, and the public was there because of the printworks. The catastrophic decline of the printworks in the 1890's would ensure that any notion of communities surviving intact at much lower levels of dependence, were untenable as out-migration caused the population to drop by over a thousand before viable alternatives could be found.

FEMALE OCCUPATIONS - (SEE FIGURE 8:3)

The female employment structure was of a more straightforward nature; around two-thirds of all females did not work outside the home, with just under half that total being children under 15 years old. This left between 30% to 34% of women in this period as either unemployed or housewives. Naturally the bleach, print and dye works were by far the biggest single employers of female labour, with between one quarter and 30% of all females in the valley employed there.

As Fig 8:3 shows, the percentage of the total female population employed at the dyeworks rose steadily from 1861 to 1881, with a slight dip towards 1891. This is in contrast to the male pattern where a very definite percentage, and significant numerical, decline took place between 1861 and 1871 (See Fig 8:2). It does appear that industrialists decided to hire more women, probably because they were cheaper to employ than men, although

Figure 8:3 - Selected Female Occupational Groupings in the Vale of Leven; expressed as a percentage of the Total Female Population in each sample years

	CENSUS YEAR			
OCCUPATIONAL GROUPING	1861	1871	1881	1891
Bleaching, Printing & Dyeing	24.7	26.2	29.9	26.4
Clothing, Tailoring, Dress and Shoemaking	1.8	1.7	2.3	1.9
Public & Professional	0.2	0.2	0.5	0.8
Domestic Servants	2.1	3.0	1.6	1.6
Food & Drink Dealing	0.5	1.1	0.8	1.2
No Job	67.9	65.8	62.7	66.5

they could hardly be accused of over paying male printwork operatives, and because the physically demanding work of block-printing was being superceded by machine printing. In addition other mechanical devices were being introduced to ease the burden all along the production line.

The statistics in figures 8:2 and 8:3 being arrived at in different ways do not adequately allow comparisons of the numbers of males and females employed at the dyeworks. Figure 8:4 derived by comparing sample estimates to the total number of males and females resident in the Vale of Leven at that time gives the approximate numbers employed at the works and resident in the Vale of Leven.

Figure 8:4 - Estimated number of employeès of the bleach, print and dye works resident in the Vale of Leven 1861-1891.

	MALES	FEMALES
1861	1,846	1,284
1871	1,524	1,422
1881	2,815	2,509
1891	2,514	2,379

NB - These figures do not include workers who lived outside the villages, either in rural areas or Dumbarton. In the latter case there were more women printworkers than men resident there. See section on female occupations in Dumbarton (Chapter 9).

Generally after 1861 as many women were employed in the works as men, but it is important to notice that the only date at which both male and female nùmbers declined relative to their position at a previous censùs was in 1891, symptomatic of a final and widespread decline.

Other sectors were small; servants accounting for 1.5% to 3.0% with dressmaking and millinery employing in the region of 2%. Here many women worked at home, in back shops or in 'sewing rooms' for low piece work rates. Conditions were poor, and the working day was long. Their plight was highlighted in the Lennox Herald which told of, 'toiling in close unwholesome rooms for thirteen to sixteen and a half hours in the busy season'. If employees fell ill or had to give up there were others anxious to take their place. As a result of this unsatisfactory state, the journal appealed to employers for better conditions and for alternative sources of employment to be found (L H 18 June 1864).

Conditions were no more pleasant in the printworks. Hours were shorter and pay, on average, higher, but the hard work called for those who were young and fit. The 1861 situation was not atypical, when over four-fifths of the women working in printing and dyeing were under 25 years old.

CHILD LABOUR - (SEE FIGURE 8:5)

The printworks fully exploited the opportunities to employ children on low rates performing menial, but necessary, tasks. The most common job done by children in the works was that of 'tearer'. This involved spreading the dye paste onto the printing block prior to use. Figure 8:5 shows the extent of child labour used in the printworks.

Figure 8:5 - The employment of child labour in the Vale of Leven printworks 1861-1891. (Figures are expressed as a percentage of the total male and female workforces in the printworks):

	MALES		FEMALES	
AGE COHORTS	5-9	10-14	5-9	10-14
1861	1.3	12.9	2.1	27.2
1871	2.2	18.0	1.7	22.1
1881	0.2	10.4	1.3	14.7
1891	-	9.7	-	9.7

The figures above are considerable, particularly before 1891, but what makes them even more outstanding is the fact that few children were employed elsewhere. A small number were utilised as general messengers and servants, but even in 1861 no child under ten years was employed anywhere other than the printworks.

The 1872 Education Act which made universal primary education compulsory, had some effect as figure 8:5 shows, but the problem was circumvented by some factory owners who provided schools, often at the works, where children could be educated while retaining their jobs on a part-time basis. Even in 1881 there was a sprinkling of children under ten years old in employment. Thereafter numbers declined and the average age rose, but a decade later children still comprised around one tenth of both male and female workforces.

SOCIAL STATUS - (SEE FIGURES 8:6 AND 8:7)

Figure 8.6 shows the percentages of employed males categorised under Armstrong's scheme (1974) while figure 8:7 shows the percentages of employed males categorised under Anderson's scheme (1972). Hereafter these will be known as scheme A and scheme B respectively.

What is clear from both schemes is that over 50% of employed males were of 'unskilled' or 'lower factory' status. It was an

Figure 8:6 - Social Classification of Males in the Vale of Leven under 'Scheme A' expressed as a percentage of Employed Males in each sample

	YEAR			
SOCIAL CLASSIFICATION	1861	1871	1881	1891
I Professional	1.6	1.2	1.3	1.2
II Intermediate	4.0	6.0	5.3	7.5
III Skilled	32.8	34.4	31.0	30.2
IV Partly Skilled	11.1	8.9	7.2	9.0
V Unskilled	50.5	49.5	55.3	52.1

Figure 8:7 - Social Classification of Males in the Vale of Leven under 'Scheme B' expressed as a percentage of Employed Males in each sample

	YEAR			
SOCIAL CLASSIFICATION	1861	1871	1881	1891
I Professional & Managerial	2.1	1.5	1.7	1.4
II Clerical	2.9	3.6	3.0	2.6
III Trade	3.7	6.8	5.0	7.5
IV Higher Factory	21.9	20.0	20.9	23.3
V Artizan	11.8	14.8	10.4	9.0
VI Lower Factory	44.7	36.3	45.0	41.5
VII Labourer	12.6	16.7	13.6	14.2
VIII Clothing Worker	-	0.1	-	0.1
IX Unclassified	0.3	0.1	0.1	0.3

extremely bottom heavy structure which did not change markedly over time. In the printworks this group included those with such designations as 'printworker', 'field worker' and 'labourer in printworks'. At the other end of the scale very few professional or managerial status people resided in the Vale.

The figures are no more than a reflection of the factory colony status of the villages, which were built, or expanded, to house factory workers. The professional, managerial and clerical sectors included factory owners and managers, teachers, doctors and clerks, but there were few professionals in the service sector, such as bankers and lawyers, to provide a more balanced structure. After the 'labouring classes' the biggest sector was the 'skilled' one consisting mainly of printers and dyers, tradesmen who had served an apprenticeship. Once again, there were no substantial variations in the proportions of the workforce with 'skilled' status over the thirty year period.

There are however, interesting variations in the results across classification schemes, which require some explanation and help to highlight problems caused by the variety of such schemes used in historical research.

The Armstrong Scheme (Scheme A) has the beauty of being broad-banded and comparable, being based on the 1951 Registrar General's system. It has been criticised for being ahistoric, the semi-skilled category coming in for special attention in this respect. The nature of 'Intermediate' status was regarded as vague (although it was later tightened up by referring to the number of people which the individual employed) and, more pointedly, criticised for failing to separate industrial class III ('skilled') workers from non-industrial class III's.

Anderson's Scheme (Scheme B) adapted slightly here, appeared in its categories to be more pertinent to the social situation in mid-to-late 19th century Dumbarton and the Vale of Leven. The

broad-bandedness of scheme A is not very revealing in situations like this where there is no great variation, through time, in the proportions making up status groups, and yet overall it outlines the bottom-heavy situation accurately. It is limited for the purposes of comparing subtle internal variations, but it does fulfil the role which Armstrong wished for it; that of allowing a general comparison to be made, through time and space and across the work of different researchers. On the other hand scheme B separates such groups as 'artizans', 'higher factory' workers and small 'traders'. It recognises the difference in status between the 'lower factory' worker and the 'labourer' whose employment was less well paid and often sporadic; in short, it is designed not only with 19th century occupations, but with the broader economic and occupational climate of the period, in mind. Consequently it is to this scheme that most reference is made here, with the data collected under scheme A included for the prime purpose of comparability.

There are no great anomalies or inconsistencies when the sets of figures under both schemes are compared; but it would be wrong to imply that scheme B was somehow a sub-divided version of scheme A. For example, the latter's 'Intermediate' category would include clerical workers but would also contain elements classified under the former's 'trade' or 'artizan' categories, where it was indicated that the individual was a small-scale employer of labour. The 'semi-skilled' grouping in scheme A contains elements from both 'higher factory' and 'lower factory' categories of Scheme B.

It is in efficiently separating those involved in the 'trade', 'higher factory' and 'artizan' groupings that scheme B is at its most useful. This allows a much more revealing picture of 19th century urban life. It helps, for example, in delimiting the growth of a town's retail sector, and in comparing this pattern to those for other settlements. Artizan status can reveal much about the industrial structure of a town which

is unrecorded. Richard Rodger believes that economic historians have placed too much emphasis on the blue riband companies, and not enough attention has been paid to smaller operations which employed the bulk of the Scottish workforce [1].

Healthy 'artizan' or 'trade' sectors can be a sign of balance and diversity; they are indicators of the town as a central or trading place. An underdeveloped artizanal or trading dimension is suggestive of a skewed industrial structure, of over-dependence and factory colony, rather than town, status. Of course, the figures cannot always be so simply interpreted, but there can be little doubt that the villages of the Vale of Leven did suffer from these problems. There is no question that they were founded as factory colonies, but it has not been clear how long they remained so.

Figure 8:7, reiterates the primacy of the printworks as the dominant employer of labour in the valley, if it is recalled that almost all of the 'higher' and 'lower' factory workers were employed there. The percentage of 'higher factory' workers varied little, that is, their numbers increased along with the increase in the employed population over the thirty year period. The variations in the proportion of those having 'lower factory' status is more noticeable (from 36% to 45% between 1871 and 1881, for example). There is evidence of diversification of the labour force in periods when the printworks laid off their employees. The proportion of 'labourer' status males certainly increased markedly when those of 'lower factory' status diminished. But it is also worth noting that those in the 'lower factory', 'labourer', 'artizan' and 'trade' groups always contained between 72% and 74% of the workforce over the period. Again in 1871 when the percentage of 'lower factory' workers was at its lowest, the other three groups combined reached their highest level. Suggesting that people did move not only into the labouring category, but that some may have become petty dealers or attempted to move into the artizan category in, for example building repair and maintenance.

This interpretation is made with some caution, for when dealing with percentages, particularly those which account for over two-thirds of the male working population, there is the danger of expounding a circular argument. As the proportion of 'lower factory' status males went down it was therefore axiomatic that the proportion in other groups would rise, taking up a bigger share of the employed population than previously.

People may not have been switching directly to other employment categories (and therefore to other status groups) and away from their 'lower factory' status. Many doubtless left the area altogether as more people entered the other categories, as apprentices or as a result of in-migration. Furthermore, if people were able to move with ease into other social status categories, it suggests that social mobility was in a fluid state, which Neale (1981) believes to have been the case, particularly among those below the very highest rung of the social ladder; or that the status categories which were created by 20th century men do not square with 19th century realities. In defence of the scheme it must be said that it does not consist of inviolate compartments and it merely makes a general statement about the majority of people in each category, which is about the best that can be achieved given the paucity of information which we have on individuals. Just as there is a blurring at the edges of status categories in real life where people are situated on a status continuum with intervening obstacles, and not in watertight compartments, so there will always be people who do not fit neatly into these groups, even in modern circumstances where much more is known about a person's situation over and above their occupation.

The overwhelming evidence points to a very large, unskilled labour force with few 'professional' people and a small trading class which was showing signs of becoming more robust towards the end of the period.

In short, the villages of the Vale of Leven were very much factory villages, lacking an array of professional people which

would be expected of longer established settlements, with a weakly developed retailing sector, due in part to the existence of factory shops.

The results under scheme A facilitate comparisons with other towns like those collated by Dennis (1984, Table P189) where he describes Cardiff, Chorley and Merthyr as 'raw industrial towns'. Even allowing for 'variations in the interpretation of Armstrong's scheme by different researchers' (P189) it is difficult to argue against the evidence which shows that the villages of the Vale of Leven were, in total, very raw industrial colonies as late as 1891 given the high incidence of 'unskilled' status males resident there. However, a note of caution must be inserted here, for although the percentage of 'unskilled males' was greater that in the aforementioned towns, the figures quoted by Dennis were for household heads only, not for individuals as given here. Thus, in the former cases the status of working children or boarders is ignored. Using household heads only will tend to depress contrasts in the proportions assigned to different status groups; because:

a. it does not take into account for example the fact that there are likely to be more occupations recorded for a class V household than a class I and;

b. that as there are likely to be many more class V households than class I households.

An accurate pattern of the social fabric of the town could be disguised by referring only to household heads. In spite of these problems, the proposition that the villages in this study were very immature industrial entities is strengthend by the lack of structural change through time. The former studies cited by Dennis were limited to dealing with the 1871 census at the latest, by the hundred year confidentiality rule. Here twenty years later, over 50% of employed males in the sample were still in 'unskilled' status groups. While population turnover may have been high, especially among the unskilled section of the

population, the social structure had largely ossified under the overwhelming influence of the printworks and their owners, an unhealthy relationship which was to have profound effects upon these communities when the works went into a marked decline in the 1890's.

NOTES

1. Views expressed in a paper given in the Department of History, University of Strathclyde 1986.

CHAPTER 9: DUMBARTON: DEMOGRAPHIC, OCCUPATIONAL AND SOCIAL STRUCTURE

DEMOGRAPHIC STRUCTURE

In the thirty year period covered by this study, the burgh of Dumbarton grew in population from 8,440 to 17,832. Such rapid growth is indicative of industrial prosperity, as net in-migration signalled the abundance of jobs in heavy industries, principally shipbuilding and its associated foundries and machine shops. Benefits percolated throughout the economy. House building programmes gave employment to masons, joiners, plumbers, slaters and plasterers. Shopping and transport facilities were required as well as a whole range of public and professional services, stimulated not merely by urban growth but by improving educational, public health and governmental services as well as by the enhanced expectations of the populace.

The previous sentence may imply an ever increasing involvement of local government in burghal development, but its powers were very limited by present day standards, and in any case it was controlled by the industrialists themselves. The dire housing shortage, overcrowding, and the dreadful sanitary conditions which were the dark side of industrialisation, would have been daunting enough for a body with wide and statutory planning regulations along with vast sums of money at its disposal, far less the nascent local administrations of the late 19th century.

The demographic characteristics of Dumbarton's population reflected, not the industrial success of shipbuilding and heavy engineering, but the ravages of poor housing, cramped living space, inefficient water supplies and perfunctory sewage disposal. Death rates were high; between twenty and twenty six per thousand on average. This may not have been as high as many major cities, or larger industrial towns, but in this case scale proved important. Housing developments of a modest size by city standards could

have had profoundly beneficial effects in a small town like Dumbarton.

Typically, infancy was the stage at which the population was most vulnerable, and the population pyramid reflected this; the high birth rates which compensated for the high risk of death among infants and the predominantly young, but rapidly growing, community gave the pyramid its wide base and tapered apex.

As with the age/sex structure of the Vale of Leven, the sample population has been placed into four main life-cycle stage categories as shown in Fig 9:1.

What is perhaps most remarkable is that in a town whose population had more than doubled in thirty years, there was very little in the way of major changes to the age/sex structure. Its base heaviness prevailed, suggesting that sanitary improvements had yet to have any real effect on public health. Improved hygiene and stricter planning controls were offset against the rapid and unplanned growth of population which in turn led to pressure on the physical fabric of the burgh, manifested in the number of 'made-down' dwelling places and makeshift infilling of backland plots.

The local newspapers were aware of the correlation between death rates, diseases and the unsatisfactory nature of Dumbarton's urban environment. In 1863 typhus and smallpox epidemics had swept the town, and in the report which highlighted these problems, there was also mention of the poor sanitary conditions, overcrowding and the difficulties which the 'labouring classes' had in getting any kind of shelter (D H 12 December 1863). Again in March 1864, reports linked sanitary conditions, 'alarming numbers' of diseases and building on the long narrow gardens (that is, plot repletion). There was also the suggestion that not enough was being done 'to enforce the Police Act and Nuisances Removal Act' by local authorities (D H 19 March 1864).

FIGURE 9:1 - DUMBARTON: AGE/SEX STRUCTURE

		CHILDREN (0-14 YEARS)	YOUNGER MOBILE (FAMILY): (15-29 YEARS)	OLDER FAMILY (MOBILE): (30-44 YEARS)	OLDER SEDENTARY: 44+	TOTALS	
1861	Male	183 98 95 376 (20.2)	90 109 106 305 (16.4)	96 54 46 196 (10.5)	32 28 17 14 10 8 109 (5.8)	986	1862
	Female	141 129 69 339 (18.2)	49 83 106 238 (12.8)	71 53 57 181 (9.7)	30 22 15 20 14 17 118 (6.3)	876	
1871	Male	212 156 151 517 (21.3)	96 123 111 330 (13.5)	112 85 64 261 (10.7)	38 47 28 28 11 14 116 (6.8)	1276	2440
	Female	188 159 110 457 (18.7)	99 79 94 272 (11.2)	94 97 49 240 (9.8)	37 47 28 35 22 26 195 (8.0)	1164	
1881	Male	190 180 161 531 (20.2)	146 190 103 439 (16.7)	88 92 66 246 (9.3)	66 53 26 30 17 14 206 (7.8)	1422	2631
	Female	186 148 125 459 (17.4)	122 117 89 328 (12.5)	81 89 52 222 (8.4)	66 49 29 31 12 13 200 (7.6)	1209	
1891	Male	173 165 139 477 (19.4)	147 117 102 366 (14.9)	107 61 50 218 (8.9)	59 52 32 18 12 13 187 (7.6)	1248	2457
	Female	158 157 131 446 (18.1)	128 114 104 346 (14.1)	91 62 58 211 (8.6)	66 45 34 27 16 18 206 (8.4)	1209	

For Key see Figure 8:1 in previous Chapter

Sub standard construction and the haste with which tenements were erected were referred to in June of that year (D H 4 June 1864). The need for this accommodation was due to the large population increase of 2000 since 1861. The result was a frightening increase in death rates. The Dumbarton Herald reported that the quarterly return for Dumbarton up to September 1864 showed death rates at 48.4 compared to the 'small towns' average up to June of 27.7 (D H 17 September 1864). The intense population pressure on such a physically restrictive location was no better seven years later, as well meaning legislation was ignored or circumvented. In one case a submission to build 'dwelling houses and a workshop on backland' was upheld by the Sheriff, despite doubt over its legality under the General Police Act. The Lennox Herald reporting the case went on to say that if the Act was to be conformed to, 'there would be no building in the town' (L H 6 April 1871).

In essence, developments like Dennystown, and later Knoxland, only prevented the situation from getting worse, and by the end of the period considered here there had been little opportunity for real advancement in public health. In each census year between 37% and 40% of the population were 14 years old or under. There is the merest hint that this sector was diminishing slowly as the pace of demographic transition began to accelerate, but this is no more than an impression which, for this sample, has no statistical significance.

In all years, the number of male children ran slightly ahead of the number of females.. This served to exaggerate the sex imbalance brought about by differential migration in favour of males, attracted to Dumbarton by its heavy industry.. There is no doubt that many of the young women were migrants too; and an influx of young adults here had further implications for the growth of population as they were most likely to start families and so contribute to its natural growth.

MALE OCCUPATIONS - (SEE FIGURE 9:2)

Unlike the Vale of Leven, where by 1861 the bleach, print and dye industry had already over one hundred years of history behind it, the shipyards of Dumbarton were a very recent phenomenon. As quoted in Chapter 1, Irving (1860) wrote of the transformation which the shipyards had brought to the town. Figure 9:2 charts this growth; where only 25% of the employed males worked in the shipyards in 1861, but 44% of a higher base total worked there twenty years later. The population having risen by 7,163 to 15,603 in that time.

At all four dates the iron and steel workers, the foundry trades, made up the next biggest sector of employment. This is not to imply that Dumbarton had a broad industrial base as a result. For if the shipyards suffered from a loss of orders, the foundries would have been unable to offset or ameliorate the effects of this. The foundries main purpose in this burgh was to provide castings for the shipyards; and if the shipyards lost orders then the foundries did too. The relationship was not completely parasitic as the foundries did service other heavy industries. There is no need to look far into the past for proof of this. Dennystown Forge, opened in 1854 did not close until 1982, post dating Dennys closure by 19 years. But overall their location in Dumbarton was at the behest of shipbuilding, more favourable localities for independent foundries were to be found further east on the coal and iron ore fields of Lanarkshire. Similarly, many of those categorised under the 'machinery' label were dependent on the shipyards, working in engine shops as engineer fitters or turners, for example. The sizeable variations in the machinery workers category were probably due mainly to how people described their occupation, for example, an 'engine fitter' was categorised as working with machinery whereas an 'engine fitter in a shipyard' was included as a shipyard worker. An industrial base which appears to be healthily broad can thus become narrower under closer inspection when the links between industrial groupings are investigated.

Figure 9:2 - Selected Male Occupational Groupings in Dumbarton, expressed as a percentage of the Employed Male Population in each sample year

	CENSUS YEAR			
OCCUPATIONAL GROUPING	1861	1871	1881	1891
Shipbuilding	25.5	40.9	44.5	39.6
Iron & Steel Trades	11.8	13.2	11.7	14.8
Machinery	7.6	0.8	4.8	8.2
Other Manufacturing	4.1	4.8	3.6	3.0
Agriculture	3.3	0.8	2.0	0.5
Mining & Quarrying	2.9	0.5	0.2	0.1
General Labouring	12.1	9.3	4.0	3.5
Public & Professional	4.3	3.7	2.7	4.3
Bleaching, Printing & Dyeing	-	-	1.3	0.6
No Job (as a percentage of the total male popplation)	37.2	37.9	37.7	40.1

This was no great problem for Dumbarton over the 1861 to 1891 period, Denny and Brothers being one of the foremost shipbuilders on the Clyde, with a record of innovation and technical excellence. Nonetheless, shipyard workers constituted 39.6% of the employed male population in the sample for 1891, but 44.5% ten years previously. This apparent decline was against the background of a growing population and was thus a growth in real terms; and when taken with those in 'foundry' and 'machinery' trades, these three sectors accounted for 62.6% of the sample male working population; much the same as in 1881. This underlines not only the importance of shipbuilding to Dumbarton, but also the previous point; that the industrial base was narrower than the data in figure 9:2 suggests.

There were other, small scale, manufacturing concerns in the burgh. The ropeworks was again partly dependent on the shipyards, but not wholly so. Other industries included a glue factory, tannery, grain mill and gas works; with numerous artizans and craftsmen in blacksmithing, tailoring, carpentry and baking, many supplying local shops in what was after all the market town for Western Dunbartonshire. The proportion of building workers was substantial, but building like other occupations was cyclical and had a wide spectrum of operatives. Many, in this period were involved in erecting substantial additions to the burgh, firstly at Westbridgend (Dennystown) and later at Knoxland and the Newtown area to the east of the old burgh core. There was employment to be had in public works, such as the building of an academy and burgh hall and in redeveloping the High Street along the fronts of the burgage plots. But in behind the emerging grand facade the long parcels of land were witness to an altogether less attractive process, that of plot repletion, mentioned earlier in this section. Many of the cellars or out-buildings which housed labouring families were small, dark, ill ventilated and crudely constructed, where little heed had been paid to planning restrictions. Ironically, many building workers engaged in this type of enterprise found that their jobs were about as secure as the buildings they put up. Job descriptions given to enumerators such as 'house and ship

painter' or 'house and ship carpenter' underline the fluidity of the labour market, which could lead to sudden hirings and firings for large numbers of men both skilled and unskilled. On the other hand the definite trend in percentage decline of the general labouring sector does reveal that the casual or sporadic nature of much employment was diminishing towards the end of the century.

The burgh's character became increasingly and rapidly industrial after 1861, although many of the most noticeable changes had occurred in the previous decade. Employment, other than in heavy industry, became relatively less important; but the burgh retained its central place and administrative functions which demanded shopkeepers, craftsmen and a small but significant number of public and professional employees. In a county town like Dumbarton there were lawyers, sheriffs, court officials, burgh clerks and county administrators in addition to the doctors, clergy and teachers common to most modest settlements.

FEMALE OCCUPATIONS - (SEE FIGURE 9:3)

The female employment sector was extremely underdeveloped in the Dumbarton of this period. The reasons are not difficult to find; There were simply no jobs for women in the heavy industries in which the town specialised. Over 80% of all females were not employed at all four census years. Taking the 32% to 35% who were girls of fourteen years or under, this still leaves around 50% of women over that age unemployed outside the home.

There were no large-scale employees of female labour of the type found in Victorian mill towns. On balance, lack of opportunity rather than lack of need was the crucial factor. Many husbands and fathers worked in the shipyards and foundries and the money which they were earning was better than many of their Scottish contemporaries could achieve (Campbell 1980). There were big variations in the amount of money and regularity of employment

Figure 9:3 - Selected Female Occupational Groupings in Dumbarton, expressed as a percentage of the Total Female Population in each sample year

	CENSUS YEAR			
OCCUPATIONAL GROUPING	1861	1871	1881	1891
Domestic Service	6.6	5.3	4.1	4.1
Bleaching, Printing & Dyeing	0.5	1.8	8.0	6.4
Clothing, Tailoring Dress	1.7	2.1	1.7	2.9
Public & Professional	-	0.4	0.6	1.2
Food & Drink Dealing	0.8	0.9	1.3	1.3
No Job	80	84.8	81.1	80.1

enjoyed by skilled men when compared to unskilled labourers. (In 1864 ships carpenters, not the highest paid of skilled men, were earning 6/- per day, reduced to 5/- by the Clyde shipbuilders, whereas in 1871 one labourer claimed that his earnings were only 13/- per week) (L H 8 June 1871). But in all cases lack of accommodation which led to high rental charges ensured that little of this income was disposable. There is no reason to think that many women, given a choice, would not have worked to boost family earnings.

Of those who did 4.1% to 6.6% of the total female population lifted in each sample year were servants. A substantial proportion by modern standards, but not uncommon in Victorian times. There are indications of a gradual decline in this sector as the century progressed which is suggestive of modernisation; but the lack of alternative opportunities still allowed servants to be hired quite cheaply by Dumbarton's 'middle classes'.

Bleaching, printing and dyeing, insignificant in 1861 eventually overtook domestic service at the latter censuses as the biggest employer of female labour in the burgh. As there were no printworks in Dumbarton these women must have commuted daily to those factories further up the Leven, particularly to those in Renton, the village closest to Dumbarton's western edge.

Printworking was probably preferred to domestic service as a means of employment, despite the travelling involved in the former; but there were definite differences in the type of labour force employed by each. Most women were likely to be in employment in the early to middle stages of the life-cycle. This was overwhelmingly so in the print and dyeworks where the vast majority of operatives were between 14 and 24 years of age. Domestic service embraced a wider age group, where around 40% of those employed were outwith the younger age cohorts. Printworking was a short-term, probably pre-marriage, occupation, whereas domestic service involved families of servants in the few larger houses on the periphery of Dumbarton, as well as older

women who did not 'live-in' but who were employed, sometimes part-time, as domestics by the less affluent among the servant keeping classes.

CHILD LABOUR

Few children were recorded as being in employment in late 19th century Dumbarton. In the sample, only one male child in the 5 to 9 years age cohort in 1861, was designated as employed. At no other time was a child of that age, male or female, in work.

Around 20% to 25% of boys in the 10 to 14 age group were employed, but they were not heavily concentrated in any one sector. Shipbuilding occupied between one-quarter and one-third of them, 'rivet boy' and 'message boy' being common designations, but most were in a group of nebulous categories such as 'miscellaneous' or 'general dealing'.

The reputation of the dyeworks as employers of child labour was not confined to the settlements further up the Leven valley. While they employed virtually no Dumbarton children from the sample in 1871, so as prosperity returned they did hire small numbers of children from Dumbarton in 1881 and 1891. This may have been in line with the female occupation pattern for Dumbarton in total, but it is unusual to find that an industry with minimal impact on the male occupational sector employed 7 of the 39 boys of 10 to 14 years old recorded as being in employment in the 1881 sample.

The object here is not to judge the printwork proprietors as less scrupulous than their counterparts in heavy industry. One has also got to be mindful of general Victorian attitudes, which a few visionaries apart, accepted the need for child labour. The decision to employ or not to employ children, as in the case of female employment, rested solely on the nature of available

work. Heavy industry was physically demanding in a direct way which printworking was not, and it was this feature which appears to have ensured that few children were employed in Dumbarton at this time.

SOCIAL STATUS - (SEE FIGURES 9:4 AND 9:5)

The problems of identifying a person's social status, the proliferation of classification schemes and the subsequent difficulty of synthesis have been referred to elsewhere in this work (see Chapters 2 and 7). The reasoning behind the use of the Armstrong (1974) and Anderson (1972) schemes to order data for the Vale of Leven which was discussed in the previous chapter also applies to Dumbarton.

As figure 9:4 shows, under scheme A between 34% and 40% of working males were in the 'unskilled' category, whereas between 47% and 51% were of 'skilled' status. This is a natural consequence of the large number of skilled workers required in shipyards and other heavy industries, such as carpenters, fitters, mechanics, boilermakers and moulders, but it is also an indication of large numbers of skilled artizans and tradesmen resident in the town. True, the majority in this 'class' were employed in shipyard or factory industry, but the insensitivity of the classification for both skilled and unskilled men, masks some important trends.

Taking scheme A's 'skilled' category first, which shows little evidence of fluctuation over the thirty year period, being indicative of a steady demand for skilled labour as the shipyards and their ancillaries grew along with the burgh's population. In other words, industries, population and demand for skilled labour grew apace. Scheme B (Fig 9:5) reveals that the situation was more complex than this. While scheme A shows similar levels of 'skilled' status workers in 1861 and 1891, scheme B reveals an important shift; for in 1861 only 28% of

Figure 9:4 - Social Classification of Males in Dumbarton under 'Scheme A' expressed as a percentage of Employed Males in each sample year

	CENSUS YEAR			
SOCIAL CLASSIFICATION	1861	1871	1881	1891
I Professional	2.9	2.7	1.7	2.5
II Intermediate	7.4	5.7	5.5	8.4
III Skilled	48.6	51.0	47.9	47
IV Partly Skilled	2.6	5.7	5.0	7.0
V Unskilled	38.2	34.7	40.0	34.9

Figure 9:5 - Social Classification of Males in Dumbarton under 'Scheme B' expressed as a percentage of Employed Males in each sample year

	CENSUS YEAR			
SOCIAL CLASSIFICATION	1861	1871	1881	1891
I Professional & Managerial	3.4	3.2	2.4	2.8
II Clerical	2.4	3.2	2.4	4.7
III Trade	9.4	5.0	5.5	7.2
IV Higher Factory	28.1	37	36.3	38.2
V Artizan	18	13.6	13.5	11.7
VI Lower Factory	14.2	17.4	25.6	22.8
VII Labourer	23.5	19.2	13.9	12.1
VIII Clothing Worker	0.2	-	0.2	0.2
IX Unclassified	0.6	1.2	0.2	0.3

the males employed were of 'higher factory' status with 18% artizans operating no doubt in small workshops dotted all around the core of the burgh. The fact that about one in five of the workforce were artizans was a remnant, if not of pre-industrial days then of a time prior to the introduction of factory industry and mass production, when the burghs were the pre-eminent centres of craft guilds and market trading. This sector gradually diminished in importance against the onrush of factory workers, so that by 1891 over 38% of employed males were in skilled factory jobs and of 'higher factory' status whereas the 'artizan' status group had declined, albeit relatively, to encompass just over one in eight workers in the sample. . The growth of the 'higher factory' group was due to the growth of an array of skilled and ever more specialist tasks as processes became more sophisticated.

Similarly, scheme A, shows variations in the 'unskilled' sector which were slightly more marked than those in the 'skilled' category, not surprisingly considering that many were in a very fluid employment situation, but it fails to tease out an important trend away from 'labourer' status towards 'lower factory' status which is recognised by scheme B. In employment terms this represented a move away from non-factory, unskilled work towards unskilled factory work. Such a distinction may be less important today, but in the Victorian era 'lower factory' status may not have been well paid or secure, but it was generally better paid and more secure than those jobs in the non-factory, unskilled sector which merited 'labourer' status. Just as the distinction between 'higher' and 'lower' factory status became more important as a labour aristocracy detached itself, often physically from the less skilled, so under the factory system another crucial division in the working classes opened up between those who could obtain regular factory work and those who could not. Hence the need to distinguish between 'lower factory' and 'labourer' status. Geographers have looked for spatial evidence of the fragmentation process in the residential separation of these groups, see for example Lawton and Pooley (1976) and this theme is taken up here in succeeding

chapters. Thus, while the diminution of the non-factory labouring sector may have been a sign of real progress, it might have served to socially and physically isolate those of 'labourer' status from other groups within the 'working class'.

In the higher status echelons the 'professional' and 'clerical' categories were sparsely populated. In an industrialising and growing burgh, both in-migrants and the products of natural growth were harnessed to the industrial machine. There is no reason to expect the professional sector to grow apace with the overall number of jobs being created, principally because the industrial population were not greatly demanding of the professional sector's services. However, the growing clerical sector mirrored the increasingly bureaucratic nature of society which accompanied widening trade links and greater governmental involvement in local affairs.

Overall, scheme B provides a view of the changes which had taken place in Dumbarton society. Strong contrasts can be observed by comparing the percentages in the social status categories for 1861 and 1891 of figure 9:5.

In 1861, Dumbarton was a rapidly industrialising town; already over 42% of the male workforce were in factory or shipyard employment, but there were still vestiges of an earlier time. Dumbarton burgh had more men of 'artizan' status than of 'lower factory' status. The artizans toiled in small workshops and yards clustered in the mediaeval heart of the burgh, often their workplaces were built on the long back lands reached, from the main street, by a 'close' or 'pend'. Traders and shopkeepers located along the High Street fronting the burgage plots.

Street traders often set up temporary stalls in the broad High Street on market days. The bulk of low status people were in the 'labourer' rather than the 'lower factory' category in a group of nebulous occupations including general and miscellaneous dealers, artizans' labourers, traders' assistants and lastly general labourers, by default those who largely took work when

and where they could get it. With over one in five of employed males of 'labourer' status there must have been a flourishing informal trading and dealing economy.

Dumbarton was an old Royal Burgh displaying an array of trades, craft and artizanal functions, still fulfilling a central place role for its rural hinterland. Grafted on to this market town was a new and rapidly expanding industrial segment. By 1891, this addition had grown to dominate the town. Shipyards, foundries, engine works and machine shops had encouraged in-migration, which in turn fuelled a natural increase in population. Employment was overwhelmingly industrial, leading to a swelling of status groups IV and VI (scheme B) comprising 'higher' and 'lower' factory status individuals respectively. New housing had been constructed to accommodate these groups, leading to changes in the spatial patterns of status groups. The types of industry and their demands ensured that 'skilled' or 'higher factory' status workers were in the majority over their unskilled workmates; but together in 1891, they accounted for 61% of the male workforce in the sample. There were no concentrations of female labour, although the influence of the Vale of Leven's printworks which had a large female contingent in its workforce, was apparent among the younger townswomen.

CHAPTER 10: A COMPARISON OF THE DEMOGRAPHIC, OCCUPATIONAL AND SOCIAL STRUCTURES OF THE VALE OF LEVEN AND DUMBARTON

DEMOGRAPHIC STRUCTURE

On first inspection the population structures of Dumbarton and the Vale of Leven are not dissimilar. Population pyramids for both areas would describe a shape not unfamiliar as that of a less developed country today. One which is in demographic transition, and as such is characterised by a wide base, narrowing rapidly towards the old age cohorts; a shape indicative of high birth and death rates.

The Dumbarton pyramid was slightly more youthful, and at the earlier censuses (1861 and 1871) had fewer people over 44 years old, a consequence of the higher death rate in the burgh and possibly the presence of a more recent, and therefore younger, in-migrant population. The most evident and enduring difference was not due to natural increase, but to differential migration, for in the mobile age groups the sex imbalance appeared to be a result of demands of industry. In the Vale of Leven's printworks where female labour constituted an important and sizeable element in the workforce, the proportion of females in the 14-29 and 30-44 age cohorts was always higher than in the corresponding male cohorts at each census year considered here. In contrast, Dumbarton, a centre of heavy industry with few opportunities for female employment, displayed the very same trends, only this time males were never outnumbered by females in these cohorts at any of the four census years. It does suggest that migrants were aware of the differing opportunities available to them in these settlements, and were prepared to move accordingly.

Throughout the period Dumbarton suffered from a consistently higher death rate than the Vale of Leven. Only Renton came close to equalling the burgh's rate. There can be no doubt

that poor housing, overcrowding and lack of sanitation were to blame for the problem. As indicated in Chapter 6, where published census reports were analysed, Dumbartonians lived in more confined and 'made down' accommodation with more 'families', or more correctly co-residing groups, per house. Even the figures given in that chapter hide the real problem which was the layout and density of housing and more spacious backlands and gardens. In Dumbarton such open ground was rapidly covered with buildings, the long narrow 'closes' which linked backland to main street were dark and insanitary. The River Leven, already polluted by the dyeworks and those living close to it was an open sewer running immediately 'behind' the overpopulated High Street.

The irony here is that wage rates in Dumbarton were higher than in the Vale, but the cost of accommodation was also higher and this meant fewer benefits of that advantage were in evidence. There was certainly not enough of a wage gap to allow Dumbarton's working people the enjoyment of a life-span equivalent to that of their near neighbours.

MALE OCCUPATIONS - (SEE FIGURES 8:2 AND 9:2)

In comparing figures 8:2 and 9:2, over-dependence on the bleach, print and dye works as the Vale of Leven's major employer of male labour cannot be in doubt, whereas Dumbarton appears to have maintained a broader spectrum of opportunity. Of course, as explained in the previous chapter this breadth was, in part, illusory as foundries and machine shops leant heavily on the shipyards for orders. Taking the notion of dependence a stage further to embrace the whole occupational structure of each area it is nonetheless true that Dumbarton was in a more secure position for two reasons. Firstly, heavy industry was in the ascendancy with Denny Brothers among the foremost pioneers of technical advance, and secondly, there was an array of other trading and manufacturing jobs.

This is not to suggest that had the shipyards experienced grave difficulties at that time there would not have been widespread hardship, poverty and out-migration, but merely to indicate that there was a small core of other independent occupations which would have survived, just as Dumbarton's central place function would have been retained. Whereas the Vale of Leven, with a less than reliable staple industry, had little to fall back on. Workers in building, quarrying, transport, retailing and the professions were dependent on the success of the printworks.

Perhaps the best indicator of the prosperity and security of the relative industrial climates lies in a comparison of those working outside of the immediate industrial environment in which they lived; that is those working in the heavy industry of Dumbarton but living in the Vale of Leven and those working in the printworks but living in Dumbarton. As figure 8:2 shows, between 5.2% and 6.8% of the employed males in the sample resident in the Vale of Leven at any census year worked in shipbuilding or iron and steel trades, allowing for the fact that there was a small iron foundry in Alexandria, this represents a not insignificant number who were prepared to travel to Dumbarton for their employment. Most lived in Renton or Bonhill, within a few miles walking distance of the burgh. Dyeing, in contrast, had a minimal impact on the male working population of Dumbarton, the highest percentage (1.3) coming from the 1881 sample. From what is generally known about the historical development and decline of these industries (Slaven 1975) it is not surprising to learn that at these dates, heavy industry had a greater attractiveness than printworking, judging from its ability to draw workers from a wider radius than the latter. In part this was a product of the dire housing situation in Dumbarton which caused workers to lodge in outlying villages (D H 19 March 1864). There were not the same levels of overcrowding in the Vale, but this in itself may have been an indication that its industry had less power to attract.

The watershed of industrial fortunes may well have been the Civil War in America of 1861 to 1865, for while both printing and shipbuilding had suffered as a result of the Western Bank failure of 1857, the supreme irony in this small district lay in the effects which a distant war had on its industries. The problems which were visited on the printworks of the Vale have been alluded to earlier, in Chapters 1 and 8, but less appreciated are the benefits accrued in Dumbarton as Peter Denny of Denny Brothers and Archibald Denny, a relative of Peter's whose shipyard was, nonetheless, totally unconnected with the more famous Denny Brothers concern, built 'blockade runners'; light, fast ships designed to slip past the Union ships lying in wait off the Confederate ports. Some were built on speculation, others to replace Clyde built ships, lured from their regular service by the prospects of running this highly lucrative but dangerous route, others still to replace those sunk in the attempt. Peter Denny even built the Confederates a gunship - the Georgia, which had a short but spectacular career.

The Clyde in general received a great fillip from the war. Local newspapers were full of references to the activity in the yards, the number of new yards on the River and the steady stream of orders, which were sometimes insensitively linked to the number of ships being sunk attempting to run the blockade. What is more important is that the shipyards capitalised on the prosperity engendered by the War and went on to add to their success, whereas the printworks rallied briefly before going into a terminal decline. There is a danger of putting too much emphasis on the American Civil War as being the cause of success or failure. What it did in the case of shipbuilding was to accelerate the flow of orders, to foster success which, with the benefit of hindsight, would have been achieved over the second half of the 19th century in any case. In printworking as in the other cotton trades it merely underlined the industry's basic instability (Campbell 1980).

The major contrasts then, were not to be found in the number of jobs available in the main industries of either area, but in the success of one industrial sector and the less stable nature of the other. The smaller occupational categories show by default that Dumbarton was heavily dependent on the large-scale industries situated there, but unlike the Vale of Leven not entirely so. The percentage of 'general labourers' in the respective workforces is most revealing as the majority of these people had no steady employment. In 1861 when Dumbarton's heavy industries were still in their infancy, the textile processing industry of the Vale of Leven was approaching old age. At that date Dumbarton had three times the proportion of 'general labourers' than were present in the Vale's male workforce. Yet by 1891 there were proportionally fewer in the former settlement's workforce. The trend being that increasing numbers of workers were coming into the more regularly employed sector, while the Vale's level of irregularly employed general labourers was still declining slowly from its 1871 high point (see Figures 8: 2 and 9:2).

However the most obvious difference in occupation structure did not occur in the realms of male employment at all, but in the female sector.

FEMALE EMPLOYMENT - (SEE FIGURES 8:3 AND 9:3)

The female employment structures were simpler than those for males displaying a narrower group of sizeable categories. Whereas figures 8:2 and 9:2 were based on the employed male population (unemployed males, mainly children, accounted for 33% to 40% of the total male population) figures 8:3 and 9:3 were based on percentages of the total female population to avoid over-emphasising the significance of employment groups which if based on the employed female population would appear to be very large compared to the actual numbers involved. Furthermore the differences in the 'unemployed' sectors of either male occupation

structure was not very great. Dumbarton having slightly fewer of the total male population in work, due to a larger proportion of male children and lower level of child employment. In the female employment sector there were very large differences in the base proportions of females in work. Thus, to highlight these structural differences the total female population was considered in each case.

The most dramatic differences between structures had social as well as occupational ramifications. For a while over 80% of Dumbarton's females did not work, the figure in the Vale of Leven was, according to the sample, between 62% and 68%. At all four census years between one quarter and three tenths of the whole female population of the Vale worked in the dyeworks. Such opportunities attracted single women migrants into this young women's work. Dumbarton could offer nothing remotely comparable; in fact at the later censuses dyeing was by far the biggest female employer in the burgh. This involved a daily journey to the Vale of Leven, most probably Renton, and back of 1½-2 miles each way at the least. At its height the journey would have involved around 550 women. The majority were young and unmarried females who could find no work in their home town. The pull of the printworks cannot be interpreted in the same way as the spheres of influence of male employment opportunities was in the previous section, as there were no real alternatives for women to which printworking can be compared.

Domestic service followed by assorted dressmaking work were the next likely outlets for employment, although in the Vale they were far behind printworking in popularity. The former assumed an important level in Dumbarton, with its more balanced social structure it had a sizeable number of middle class households able to employ servants, whose impact was exaggerated by the lack of competition from other forms of employment which would have forced wage rates up. Dressmaking employed a small proportion of women, virtually the equivalent of general labourers, their work was often casual and sporadic based on piece rates and what is graphically described as 'sweated labour'.

At the other end of the spectrum in neither the villages nor the burgh had women made any real inroads into the public or professional sectors by 1891, the main openings being as elementary teachers, lower in status than their better qualified male counterparts.

As fewer employment opportunities existed for Dumbarton women, there was a good deal of underemployment in the casual sector, where older daughters acted as housekeepers in their own homes. Under the tabulation procedures adopted here they were categorised as 'not employed'. There may have been a slight under enumeration of employed women; those who did not consider that this type of job warranted the description 'occupation' and so omitted it in their census return.

Notwithstanding the greater difficulty of finding regular paid employment in Dumbarton, women's work was largely governed by their stage in the life-cycle, this being especially true of printworking. When a young woman married, most often a family quickly followed and she left work to look after the children. Factory industry at least seemed to free women from the task of bringing up a family over and above holding down regular work or duties, in a way that rural employment did not. In effectively preventing the youngest children from entering the factory, mothers had to remain at home to look after them.

The vital income earned by young women was an important and necessary facet of the Vale's economy, helping to boost cumulative household earnings in this lower wage climate. The problem was that they earned this money in the same industry as their male counterparts and as such their wages could not act as a bolster against any downturn in trade.

CHILD LABOUR

Shipbuilding and heavy engineering also afforded little opportunity for child employment. Most of the hard physically demanding work which was involved had little use of their services other than as message boys and, occasionally, rivet boys. Stark contrast here with printworking which was the major employer, par excellence, of child labour throughout the district, further emphasising its low-wage nature, but due in part to its processes which offered suitable opportunities for such exploitation. The Vale's industrialists consistently employed younger children and more children than any other occupational sector; even shop working and general dealing, where it may have been expected to find children employed in an informal or part-time basis, were totally eclipsed.

Printworking spread its net to Dumbarton where it was the biggest employer of child labour in the last quarter of the century. It was an industry eager to employ children and as it moved towards a gradual diminution of this practice it did so less quickly than other sectors where there were possibilities of utilising child labour, such as retailing. It is probably in this respect that the most enduring vestiges of the factory village ethos were to be found. So that as the 19th century moved towards its close a type of settlement which is usually associated with the earlier stages of industrialisation, where greenfield water power sites were required and textile based colonies established, was alive, if not well, and present in the Vale of Leven.

SOCIAL STATUS - (SEE FIGURES 8:6; 8:7; 9:4; 9:5)

Under both classification schemes and throughout the period under study, the extreme nature of the Vale's social status structure and the preponderence of 'unskilled' or 'lower factory' status individuals resident there, is evident. Dumbarton, while

possessing large numbers of low status workers was nonetheless bolstered by a strong skilled element in its population. Under both schemes, this sector (that is the 'skilled' category in scheme A and the 'higher factory' category in scheme B) was always the biggest in any census year from 1861 to 1891.

Concentrating on the results obtained through scheme B (figures 8:7 and 9:5) important variations can be discerned. Dumbarton always had a bigger proportion of professional status individuals, the suggestion being that an ancient, royal burgh with enshrined trading rights and privileges would have a range of functions not present in factory villages. Categories II and III, 'clerical' and 'trade' are not so unambiguous in their message. The larger proportion of clerical workers at the earlier three census years was found among the Vale of Leven's working males, not Dumbarton's. These clerks worked predominantly for the printwork owners. The fragmented nature of the industry could explain this. Each printwork being under separate ownership would need its own clerks; increasing economies of scale were experienced as the works came under more centralised ownership later in the century, but offset against this would be the need for more administrative assistance as the nature of trade became more complex. Dumbarton's clerical sector showed a small rise in the 1881 to 1891 period, probably due to the growth of local government machinery.

There is little too, to choose between the proportions of the employed male populations in the 'trade' category'. The biggest divergence occurring in 1861, when the Vale's percentage in this group was 3.7 compared to Dumbarton's 9.4. This being a manifestation of Dumbarton's market function in contrast to the Vale's industrial function at that date. Later the proportion, if not the number of people, in this category began to decline. However this is not a strict comparison of like sized settlements. By the later dates Dumbarton burgh was by far the biggest settlement in the locality. It offered a broader range and higher order of service, whereas the villages of the Vale of Leven each had their own small service sector, with only

Alexandria eventually providing anything other than the basic low order convenience goods. Factory shops which operated in the printworks may have effectively stifled competition. There is definite evidence of attempts being made to suppress opposition in Jamestown (Docherty 1981). Thus while the percentage in Dumbarton's 'trade' status category was not radically different from that of the Vale's, it may be disguising the fact that Dumbarton's traders may have been better off on balance, having a bigger and long established hinterland to work within.

As with those in the 'trade' category the 'artizans' in Dumbarton diminished in relative prominence as the dramatic growth of heavy industry drew more people into 'factory' status. Whereas the 'artizan' category in the Vale was never as big to begin with and reached its peak in 1871, due more to the temporary loss of attractiveness which the printworks suffered than to a renaissance in small craft industries.

It was in the larger categories that the major contrasts were to be found. In the sample 'higher factory' status was enjoyed by 23.3% of the Vale's working males at most (in 1891); but the lowest percentage in Dumbarton was recorded for 1861 when 28.1% of employed males came into this category, when heavy industry was in its infancy. Thereafter the proportion in this category never dropped below 36%. In both cases, excepting Dumbarton in 1861, the proportions were remarkably stable over the period, given the growth in the employed population. Dumbarton always had between 15% and 17% more working males of 'higher factory' status than the Vale of Leven, even if they did not enjoy a standard of living commensurate with the enhanced status which they had achieved. Later housing improvements may well have encouraged their separation from those of lower status [1].

Lower status groups accounted for the majority of working males in the Vale of Leven. On the positive side, there were fewer in the 'labourer' category than in Dumbarton, but unlike the burgh, there was not the steady decline in this sector through

time which is suggestive of improvement.

There are admitted short-comings in the use of social status categories based mainly on occupational data to describe the social structure of towns; for axiomatically their occupational bases will go a long way towards shaping the received picture of these structures. This is especially true where there are a few large-scale employers of labour, whose operations determine the available types of work. Local sources suggest that the major employers were no less dominant than the received social status structures imply; not just as employers but in pervading every aspect of community life as town planners and landlords, and in their own self-images as patrons of good causes, benefactors, educators and social improvers.

The occupational data ordered under schemes A and B reveal a structure which was not wildly awry, adding colour and depth to, but not greatly at variance with, the outline pattern drawn from census reports, contemporary sources, and what is known through secondary texts, of the history of the settlements.

Thus far it can be stated with confidence that, the villages of the Vale of Leven were immature, low wage, low status factory colonies, with a malformed social structure, whereas Dumbarton was in the more fortunate position of having been a market and administrative centre; facts reflected in a more balanced social structure, on to which had been grafted an industrial face based on an array of connected heavy industries.

However a greater social balance does not imply social interaction, just as successful industries do not always benefit the workforce as directly as might be expected.

Consequently the following chapters, as well as considering the role of different ethnic groups, will attempt to explore the spatial dimensions of social status, ethnicity and occupation. Taking the investigation beyond a rudimentary analysis of the social characteristics of either area towards a study of variations within the settlements and their change over time.

NOTES

1. See Chapter 16

CHAPTER 11: MIGRATION AND THE VALE OF LEVEN

INTRODUCTION

In the 19th century Dunbartonshire exhibited an extremely high turnover of population even by West Central Scotland standards:

> 'heightened .... since it was a transit zone between the Highlands and Islands on one side and the expanding industries of Clydeside on the other' (Slaven 1975 P141).

This is hardly surprising given its location; straddling the Highland Boundary fault, containing major routeways which transported people from Argyll and the north-west to the industrial heartland. In its lowland section it contained steamer ports, Dumbarton especially, having connection with Ireland as well as a history of trade with the Highlands. After 1850, West Dunbartonshire was also well connected by rail to Glasgow. Mobility within the 'shire must have been significant too, with an overall drift from the rural north to the industrialising south. The experience of Dumbarton and the Vale of Leven's villages paralleled the county trends; with substantial numbers of non-locals listed in their cebs. Many of the migrations were essentially rural-urban moves, although there is evidence of inter-urban movement too. Unfortunately it would be very difficult to accurately chart the decline of the former and the continuing rise in the latter which is the suggested pattern in the Mobility Transition model put foward by Zelinsky (1971) which is discussed and modified by Jones (1986).

What can be measured is the continuing importance of migration as a factor in population growth until the late 19th century. Now, while it has been suggested in Chapter 1, that the area chosen for study here was the industrial West of Scotland in microcosm with the old order being represented by the textile

finishing industries of the Vale and the new by the shipbuilding and engineering developments in Dumbarton, no immediate claims are made as to how closely migration patterns here conform to the West of Scotland, or indeed British or European, models. Slaven, as quoted above, suggests that the Dunbartonshire experience was more extreme than that of most counties around it, but more work is required on the individual smaller towns and villages to effect a comparison between the settlements studied here and those in other parts of the country.

R H Campbell's typology of the migration characteristics of Scottish Counties 1851 to 1891, confirms Slaven's findings on the high turnover of population, but places the county in a 'large and disparate group' which included many counties in the central belt which both gave and received high proportions of migrants. The other groups in this typology were, to simplify the original statements which dealt not only with absolute flows but with the contribution each county made respective of its population size, those which were:

a. more in receipt of migrants;

b. greater contributers to the migrant stream and;

c. experiencing a low population turnover (Campbell 1984).

Dunbartonshire then, for its population size, drew in large numbers of migrants, but also supplied large numbers of migrants, and having this in common with many industrial belt counties tends to confirm that population interaction between such counties was at a high level throughout the second half of the 19th century.

For both the villages of the Vale of Leven and Dumbarton burgh, the aims here are to:

a. attempt approximations of migration trends and explain these trends.

b. examine the contribution of in-migration to the development of each area;

c. assess the appropriateness of various assumptions about laws and typologies of migration [1] and;

d. to place these local patterns in their Scottish context.

MIGRATION AND THE VALE OF LEVEN

The villages of the Leven valley were for all practical purposes founded on the back of the first phase of industrialisation, not as textile producing centres but as textile processing centres. Nonetheless, the demands were similar; abundant supplies of fresh, rather than fast, water were required. The Vales' natural resources ideal for the task and capable of absorbing expansion were vital to the success of operations (see Chapter 1). The major disadvantage lay in the lack of an indigenous labour supply, and in common with other textile colonies, labour had to be imported, initially on a seasonal basis. Lockhart (1982) has suggested that most early migration to factory villages was essentially short distance, within half a days walk from home. However, seasonal Highland and Irish labour was employed too, and many seasonal migrations became permanent as operations expanded, through technical advance, to become continuous processes unhindered by weather conditions.

From the 1850s onwards, migration was certainly not confined to the short distances described by Lockhart. Intra-parish migration is impossible to quantify using the cebs, but numbers from the Dunbartonshire parishes outwith Dumbarton, Bonhill and Cardross were small, never making up more than c 3.5% of the sample populations at any date. The bulk of in-migrants were 'Nearby Scots', those from the contiguous counties and Ayrshire, as well as sizeable numbers from Ireland (c 10% of the sample population in any census year from 1861 to 1891).

It is not difficult to understand why the mean 'lifetime' migration distance lengthened. As the scale of production increased it became concentrated at fewer growth poles than previously. Cottage industry failed and many of the more remote textile factories were, at best, moribund. Communications and transport improved; people gained a wider knowledge and keener appreciation of the opportunities available to them, and as earlier migrants maintained contact with 'home', the difficulties in moving were being lessened as travelling times decreased and fares lowered. Ravenstein (1855, 1889) for example, suggested that longer distance migration would be to the larger centres of commerce and industry. In modern parlance, as a central place grows, so its sphere of influence is also extended. The Mobility Transition Model (Zelinsky 1971) also implies an increase in the distance of migration as inter-urban migration becomes more prevalent than rural-urban movement, as the former operates over a wider area. This is not to infer that the population prior to industrialisation was sedentary or static, which could be induced from the argument thus far. Whereby large-scale industrialisation brought about 'long' distance migration, small-scale industrialisation gives rise to 'short' distance migration, and prior to industrialisation there was no migration.

Peterson (1970) has warned of the underlying false assumptions of the 'push' and 'pull' model of migration; that populations are by instinct sedentary unless impelled to move. Perhaps in certain areas and at particular times it may be more profitable to discuss causes of friction which tend to keep people in a locality, rather than to concentrate solely on what prompts them to move. This may be true of mid to late 19th century Britain when migration was extremely commonplace. Whyte (1981) has demonstrated that in pre and proto industrial Scotland a sedentary population was patently not in evidence. While longer distance migrations did occur then, people generally were in a more restricted field of movement than later, but were certainly not static.

Once a local field of migration is breached both physically and psychologically, people are less inclined to return to a restricted 'home area' locality and are even more likely to continue to migrate in search of work than their parents were. So alongside intra-county and short distance migration there was a gradual increase in inter-county and longer distance migration, that is, to borrow Lockhart's (1982) definition, to places which are further than half a days walk from home (although they may no longer have been more than half a days journey from home). This latter cycle, of inter-county migration was well underway by 1861, the first year considered in detail here.

By that date, in-migration was an important and established process both in satisfying the increasing demands of the textile processing industries for labour and in replacing those who had gone elsewhere. For it seems that even in the most favourable economic and industrial climate population mobility and inter-county migration was so commonplace that people thought little of moving to another town or village for the minimal of advantages. This is a corollary to the efficiency of industrial capitalism at this time, which endowed employers with the ability to hire and fire their low wage labour force at will. The standard of housing and the inability to pay for even the most spartan accommodation when hardship struck had made the workforce very mobile. Unfortunately for the capitalists the workers did not become immediately sedentary when required, and, if a better opportunity was perceived elsewhere, neither the job they had nor the house they lived in unfailingly proved to be a sufficient source of friction to prevent movement. Initially housing provided by employers enticed people to move to remote greenfield sites, and while it became less common for employers to act as landlords as the 19th century progressed (Dennis 1984), it was most probably used in Dumbarton as a means of restricting movement by tying skilled workers at least, to houses in which they had a personal stake (Osborne 1980).

Docherty (1981) estimated that c 52% of the Vale's population was non-native born in 1851. Even this bald statistic hides the fact that the majority of local born people were children and youths, many of course the sons and daughters of in-migrants. Of the c 48% native born more than one in two were children under 15 years old. This does suggest recent in-migration and indeed the population of the Vale had begun to climb rapidly in the two decades preceding this census. (See figure 1:1) a rise which can be partially attributed to migration, with a bulge in the population pyramid around the mobile age cohorts which Docherty (1982) demonstrated was the result of a net influx of young migrants.

As figure 11:1 shows the population rose, on average, quite steeply from 1861 to 1891, but the question is, how much of that increase was the result of continued net in-migration and how much can be attributed to natural increase. Were the villages of the Vale of Leven still locked in to a high mobility cycle or were they becoming less dependent on in-migrants as they were breeding their own populations. The steep gradient of the population growth line in figure 11:1 suggests that net in-migration was still playing an important part in peopling the Vale. Given the 1861 level of around 11,000 and the 1891 total of c 19,000 it is not impossible that, with zero migration, the population could have risen by c 72% bearing in mind that some less developed counties can be expected to double their population in thirty years, although admittedly demographic transition is more rapid in the less developed world today than it was in Europe in the 19th century. Flinn (1977 P338) tabulates birth, death and growth rates for 19th century Scottish counties. If the Vale had followed the county trend, with no migration, the population would have risen in the 1861 to 1871 decade by 14.55%; 13.8% in the 1871 to 1881 decade and by 15.1% in the 1881 to 1891 decade. Taking a base population of 11,000 in 1861 would have yielded 12,600 in 1871, 14,339 in 1881 and 16,504 by 1891; that is, around 2,500 less than were actually present in 1891. So if there had been no out-migration by the 1861 population, and no in-migration since, it would have been expected that around

16,500 people [1] would have been living in the Vale by 1891. Clearly at least 2,500 migrants would have been needed to bring the total up to 19,000. Even with this influx the percentage of migrants would have gone down to well below 40% due to natural wastage and local natural increase by 1891, and yet in reality they accounted for around 44% of the population. This not only indicates continuing in-migration over the period but considerable out-migration by those born in the Vale.

Figure 11:2 shows the estimated migrant and local born population over the 1861 to 1891 period which suggests that in-migration slackened in the 1861 to 1871 and 1881 to 1891 decades with a brief resurgence in the interim. It is tempting to suggest that the pattern is a barometer of industrial fortunes in the Vale; as growth faltered leading up to 1861 and through the first half of the 1860s due to the Western Bank failure (1857) and the American Civil War (1861-1865), there was recovery in the 1870s, but in the 1890s industry was to suffer a catastrophic collapse, of which early signs are being shown in the 1880s. Unfortunately not enough is known about output and productivity, the year by year performance of the industry, its difficulties and its successes, to proclaim with total confidence that this is what is being witnessed. However, as has been stated here, and in common with other Victorian settlements, labour was extremely mobile, and broad national migratory trends did respond, if not to very short cyclical changes in business performance then certainly to longer term economic growth cycles (Brindley 1973). On a smaller scale, there is no reason to suppose that even a small down turn in trade would not lead to out-migration if no alternative sources of employment were readily available. Migration patterns to and from the Vale of Leven may have been acted out on a smaller stage than Brindley's but his contention that:

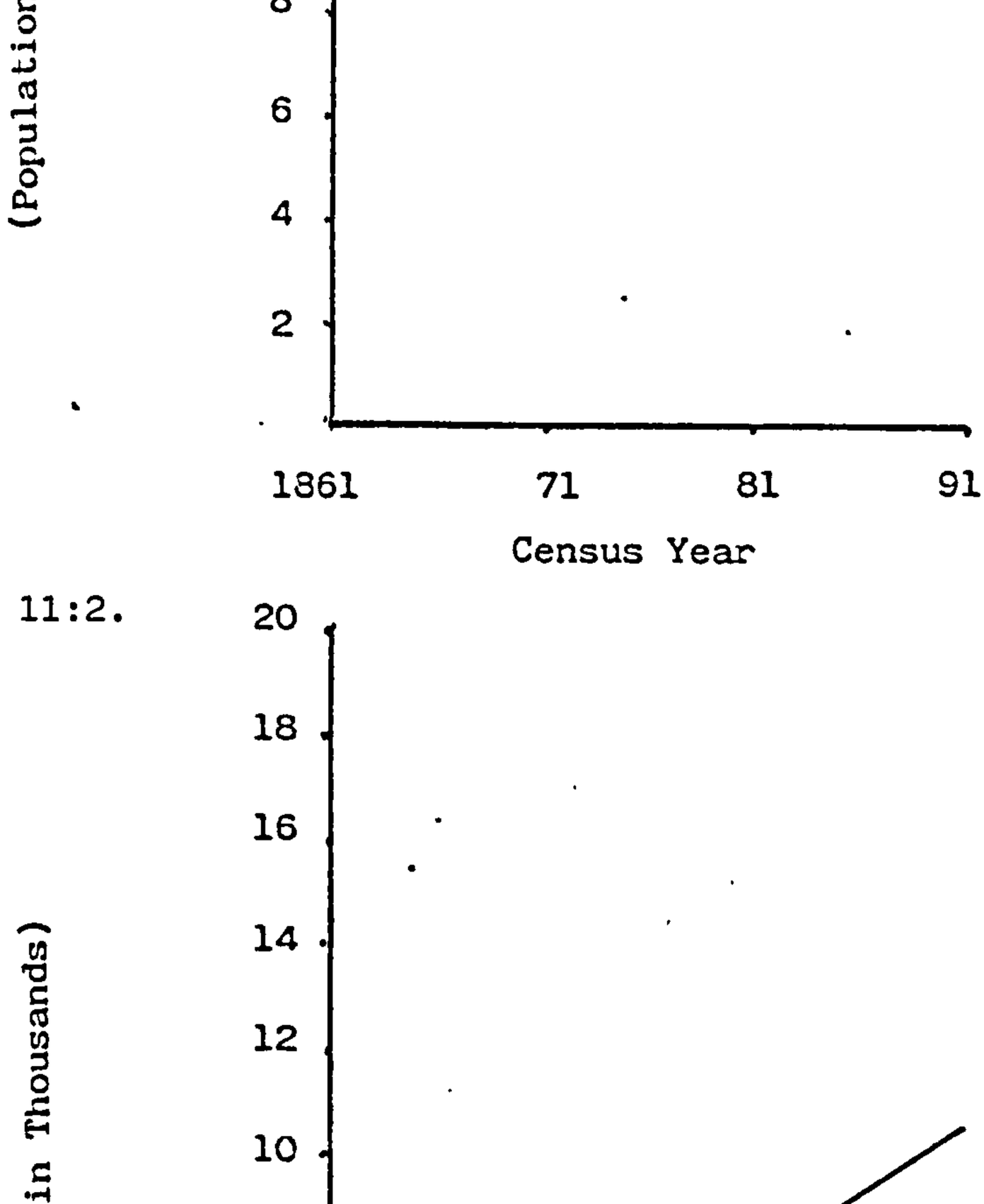
> 'Income, wages and employment vary together and their fluctuations are the opposite of those of net migration (and foreign investment)'
> (Brindley 1973 P104).

Figure 11:1 - Population Growth: The Vale of Leven 1861-1891

Figure 11:2 - Population Growth: 'Local' and 'Non-Local' born the Vale of Leven 1861-1891

11:1.

11:2.



does seem to apply to the Vale's villages in the 19th century.

Migrants and potential migrants in the Vale of Leven were often rootless, prepared to move to wherever economic advantage could be gained. It does appear as if most in-and out-migrants were responsive, and aware of the opportunities liable to be present at a given location. This is demonstrated by the sex imbalance in the total population figures for the Vale of Leven printed in the Census Reports, which the sample here has shown to be largely the result of differential migration in favour of females. Of course it could be argued that the population was randomly mobile and merely by a process of trial and error managed to find suitable employment. This approach, emphasising mobility, per se; while the former stressed decision making. There is doubtless an element of randomness in many moves, but it is known that personal communication is important in stimulating migration, and from the places of birth common to many migrants it can be deduced that a substantial proportion, if not all, in-migrants made a conscious and calculated choice based on the likelihood of finding work for themselves and perhaps their families.

Differential migration to the Vale upheld one of Ravensteins 'laws', by no means universally accepted, that females are more likely to migrate within their own country (men being more likely to emigrate). Grigg (1977) explained Ravenstein's reasoning here; women migrated because of lack of employment opportunities in rural areas, urban demand for domestics and the fact that it was the women who usually moved upon marrying citing the exceptions as being areas of heavy industry. Here while the 'law' does hold up, it does so only because bleachfield employment increasingly favoured women. There being approximately six women for every five men in the mid-life cohorts (15-54 year olds) at each census year 1861 to 1891. The differential is not only the result of in-migration but of a local birth rate differential favouring girls.

The result being more migrant and local women present in these cohorts than their male counterparts at each census year under study. Curiously the employment opportunities were not exerting a greater co-efficient of friction on local born women than on local born men, for as is explained in succeeding sections of this chapter, 'local' women were very migratory.

What has been generally acknowledged as the only universal law of migration, namely that the young adult is most likely to migrate, is upheld there. For with death rates as an insignificant factor in the 15 to 44 year old range there were always more migrants, male and female at the younger end of this spectrum than at the older end.

It is very revealing that the migratory trends discussed thus far, continued, or at least reasserted themselves after 1871, up until 1891. Migration was still important in peopling the Vale despite the merest signs that its importance was on the wane. (This in itself may have been a local economic, rather than a long term behavioural change). Figure 11:2 does show that the rate of increase in the migrant population slowed in the 1881 to 1891 decade, diverging from the indigenous growth rate which steepened its climb. It would be unwise to regard this as having any wider significance by implying that it followed regional or nationwide trends. Trends in Dumbarton did not follow this pattern, for example, and it may have been born of purely local circumstances. Indeed, as is discussed subsequently, turnover, if not the overall in-migration rate increased significantly in this decade among the mobile age cohorts. Figure 11:2 shows a similar divergence in the 1861 to 1871 decade when the printworks were seen to be in difficulty. The fact that the divergence is not so great is merely the result of a smaller base population at the beginning of the earlier decade.

There has not been enough empirical study done on individual settlements to begin to generalise about mezo-scale population movements, although such moves were more prevalent than inter-regional moves for much of the 19th century.

At regional or macro scale Flinn (1977 Pp 464-465) tabulates that in the three decades under consideration here, the Western Lowlands gained population in the earlier decades but actually lost population in the 1881 to 1890 period. The following decade saw a resurgence of in-migration, but the out-migratory trend was re-emphasised very severely in the successive four decades, the peak coming in the 1921 to 1930 era when 202,892 left the region. Clearly much of this loss was due to emigration; but just how the increasing trend towards emigration affected short distance or medium distance movements is not known. Inductive reasoning suggests that it probably affected very short or intra-urban movement not at all, but as the scale of a move or a contemplated move grew, then the more emigration became another option.

MIGRATION AND THE MOBILE AGE COHORTS IN THE VALE OF LEVEN

Dealing with total numbers of migrants hides short term trends as this population is made up of 'lifetime' migrants. At any point in time it includes those who migrated many years ago and who will stay on, but perhaps more importantly it also includes those who are caught in the camera 'snapshot' that is the census, those who are merely passing through. The ten year interval between censuses means that many short term moves are missed or possibly misinterpreted. Other data sources have been used to chart mobility such as rate books and directories, but their availability and comprehensiveness are not always reliable (see Chapters 3 and 4). Those who use the census appreciate that the sampling interval is somewhat cruder than the ideal. But because the census contains the main body of raw data used in migration studies, decennial trends can be compared for a wide range of places and of course with regional or national trends.

One way of going beyond mere head counts of natives and migrants is to home in on the one group universally acknowledged to be the

most liable to migrate; young adults. The problems in so doing and the possible sources of inaccuracy were outlined in Chapter 7. However, it was thought that these difficulties were counteracted by the possible insights which might be gained by such an approach; for the migratory trends among the mobile are more indicative than they are for any other group.

Figures 11:3 and 11:4 show the 'observed' [3] figures for males and females resident in the Vale of Leven, by age cohort for each census year, while figures 11:5 and 11:6 show expected survivorship at three different levels using:

a. the mean annual death rate;

b. the age-specific death rate (estimate) and;

c. no death rate.

The figures are examined in three ways:

i. By investigating the total figures for 'native' [4] and 'non-native' [5] (or 'local' and 'migrant') groups at each census year and for the whole age range. Particular reference is made to the 15-24 age group at 'subsequent' censuses, see (ii) below.

ii. By taking 'native' and 'non-native' groups in the 15-44 age range and following them through to the subsequent census where they become the 25-54 age group, when the estimated number of deaths has been subtracted (and the practice here is to refer mainly to the most accurate age specific death rate estimate the others, the no death rate, and the mean annual death rate derived figures, appear on figures 11:5 and 11:6 for reference only) shortfalls or gains can be approximated.

iii. By taking the migrant stream and breaking it down into 'Nearby Scots', 'Irish' and Others; this is not covered here but in successive chapters on the 'Nearby Scots' and the 'Irish'.

a. MALES

In 1861, there were an estimated 175 'migrant' males in the 15 to 54 age group for every 100 'local' born men. This figure declined steadily (153 in 1871; 146 in 1881) until the ratio was c 127 to 100 in 1891. It can be stated with some confidence that migration was becoming a less important factor in peopling the male sector. However as figure 11:3 shows the population in both sectors had not grown steadily; for a severe check on growth is witnessed between 1861 and 1871 when the local born population in this cohort rose only slightly and the migrant population actually declined, providing further evidence of the difficulties encountered by the printworks at this time.

In following the 15 to 44 age group through to the 25 to 54 group of ten years later (see figures 11:3 and 11:5) it was found that among the 'native' born the estimated shortfall was around 341 or 40% as a result of out-migration. The shortfall among 'migrants' was c 19%, that is, there had been a net out-migration among 'migrants' of 1 in 5.

From 1871 to 1881 the industrial situation doubtless improved and with it there was a resurgence in net in-migration with around 14% more male 'migrants' in the 25 to 54 age group at the end of the decade than in the same sector (15 to 44) ten years earlier. Fewer 'locals' had also left, the estimated out-migration being 30%.

This far the migratory trends neatly paralleled the industrial ones. But the ebb and flow which occurred in the 1881 to 1891 decade is perhaps less easy to explain. An estimated 37% out-migration of 'locals' was matched by a statistically

insignificant, but estimated growth in the 'migrant' stream of around 1%. In-migration had continued, just replacing those 'migrants' who had left, but the rate of out-migration among the 'local' born had increased once again, almost to the levels reached in the 1861 to 1871 decade.

The major problem with this approach is that in attempting to present a dynamic view of migration, as opposed to a static 'snapshot' of the number of 'natives' and 'migrants' over a broad age range at each census which can be had from figure 11:3, the 15 to 24 year old age cohort at the second of each pair of censuses is neglected, and this may contain the most migration conscious and mobile group of all. Reference to this group helps to explain the apparent anomaly, that migration of 'locals' or 'non-natives' could fluctuate as shown above and yet the ratio of 'migrant' to 'native' could drop steadily. For from figure 11:3 the following information can be derived; that c 52% of the 15 to 24 year olds were in-migrants in 1861, but only c 40% were in that category in 1891. Thus, while the ebb and flow of migration continued, fewer young male migrants were choosing the Vale of Leven as a destination. This trend was not acute in the 1881 to 1891 decade; for c 22.3% of males who were in the 15 to 54 age group in the 1881 sample were 'non-natives' aged between 15 and 24, whereas by 1891 this proportion had dropped to c 15.4%.

To sum up, for these segments of the population, there was a very definite move away from the Vale in the 1861 to 1871 period. In the 1871 to 1881 decade out-migration definitely slowed down among 'local' born people, and although an estimate of c 30% may seem quite high, that is, three in ten of the locals in this broad group were lost to out-migration, it merely serves to illustrate the mobility of labour in this era. The Vale was again attracting more 'migrants' than it was losing.

By the 1881 to 1891 period when local out-migration increased again the migrant pattern did not follow suit. It did not replicate its pattern of two decades earlier, as a small net in-migration was recorded. What is being exposed here is not that 'locals' were going in ever increasing numbers and 'non-natives' were staying behind, but an overall increase in population turnover. For it is probable that the 'non-local' born population was even more migratory than those of 'local' birth. There must have been a very significant out flow (to judge from the behaviour of the locals) from the 'non-native' group, who were being replaced by new arrivals.

b. FEMALES

The ratio of female 'migrants' to 'locals' did not follow the same pattern of steady decline in the 15 to 54 age group as in the male sector. What happened in the mobile female sector is mirrored in figure 11:1, which shows overall migrant numbers in the Vale of this period. For each 100 'locals' in this age group there were c 143 'non-native' born females in 1861; c 137 in 1871; c 164 in 1881 and c 155 in 1891 according to the sample. Once again the recurring pattern in the Vale of Leven over this period of decline, resurgence and then the beginnings of a further decline, shows up clearly in female migrational behaviour.

Taking the 15 to 44 age group and following it through to the next census where it becomes the 15 to 54 age group reveals that male and female migratory trends were not radically different. The females appearing slightly more migratory than males in the earlier two decades when shortfalls among local born females were c 42% and c 33% respectively. The smaller shortfall among 'non-native' females in the 1861 to 1871 period concurs with the views expressed earlier about the relative increase in opportunities

for women at the printworks from the middle decades of the century onwards.

In the 1871 to 1881 decade while the 'local' male shortfall was c 30%, the 'local' females lost 33% of their number to out-migration. In addition, like the male trends there was a net in-migration recorded among the 'non-natives', but it was proportionally less than the male gain (an additional 10% compared to 14%). Again, if it is accepted that 'non-locals' will be more likely to move than 'locals', then there must have been a very high turnover in population of both sexes in this age group, judging from the large decreases in the local population and the increase in migrant representation.

The trend alters in the 1881 to 1891 period when fewer 'local' females than males left (c 32% to c 37%) and a shortfall was recorded among 'non-native' females (c 8.5%) in contrast to a statistically insignificant increase in the 'non-native' male category, which would suggest that males in the Vale were now more migratory than their female counterparts, at least in this group which had been 'followed through' from the 1881 census.

Yet despite the fluctuating migratory trends of the groups discussed in the preceding paragraphs, females consistently accounted for more of the 15 to 54 year old age group population than did the males. Once again, reference must be made to the 15 to 24 year old cohort which accounted a large proportion of migrants in the group. The differences across the sexes in 1861 and 1871 were minimal; but while a sharp increase in the proportion of migrants in this cohort occurred between 1871 and 1881 where it peaked, and then a marked decline towards 1891 is evident for both sexes, the male proportions, latterly were not as high. This reiterates the point made in Chapter 8, that printworking was a young woman's job and

that the tendency for such women to move to the Vale, perhaps as a premeditated temporary measure, was encouraged by this.

Males and females in the 15 to 24 years age group may have followed similar trends, but there was less of a tendency for young males to migrate to the Vale of Leven; 1881 was the peak year in this period for in-migration as far as the census records can be used to establish. Even around that date significantly fewer young males than young females were recorded. The trend continued throughout the 1880s, when, despite a slackening of in-migration among the young mobile population at large, young female in-migrants of between 15 and 24 accounted for 21% of all females in the 15 to 54 age group in 1891. In contrast, males of similar status were proportionally fewer than they had been at any preceding census.

SUMMARY OF BROAD MIGRATION TRENDS: VALE OF LEVEN 1861-1891

MALES

i. Among males in the middle life cycle stages the ratio of 'migrants' to 'locals' declined steadily over the period.

ii. The shortfall of 'local' males in the 15 to 44 group 'followed through' to the 25 to 54 group at a subsequent census, was always substantial; 30% to 40% of the age group had disappeared (after the age-specific death rates had been calculated and the number of probable deaths subtracted). The shortfall could not be accounted for by even the most pessimistic of death rates (see figures 11:3 and 11:5).

iii. The effects of the depression which occurred in the 1861 to 1871 decade are evident from:

a. the high proportion of 'locals' lost and;

b. the net out-migration of 'non-natives'.

iv. The turnover in population may well have accelerated in the 1881 to 1891 decade when large numbers of locals left, but out-migration of 'non-natives' which probably ran at a rate at least as high as that for 'local' born, was matched by a substantial in-migration, maintaining similar numbers of 'non-natives' in this group as at the beginning of the decade.

v. While turnover was most probably high towards the end of the period under study, a gradual trend away from in-migration could be discerned among the most mobile, those in the 15 to 24 year old cohort. The proportion of 'non-native' born males in this age cohort as a percentage of all males in the 15 to 54 age group dropped significantly from 22.3% in 1881 to 15.4% in 1891 according to the sample.

FEMALES

i. The ratio of 'non-native' to 'native' among females in the mobile age ranges followed the overall net 'lifetime' migration trends of the Vale's population. Producing a wider gap, in favour of 'non-natives' in 1861 and 1881 but a much narrower one in 1871 and 1891. In this respect it did not follow the male trend of steady decline.

ii. As in the male sector, the shortfall of 'local' females in the 15 to 44 group 'followed through' to the 15 to 54 age group at the next census was substantial perhaps even surpassing the 'local' male outflows in the earlier two

decades. In the 1881 to 1891 decade this relative trend reversed, and the outflow of females although high was overtaken by the outflow of males.

iii. The highest number of 'locals' lost over a decade along with the most substantial net out-migration occurred in the 1861 to 1871 decade, in concert with the economic difficulties being experienced over that period.

iv. Population turnover in the 1881 to 1891 period although still high did not match the rate in the male sector.

v. Young 'non-native' females in the 15 to 24 year age cohort were still an important factor in in-migration flows throughout the better part of this period; for although a drop of c 5% in the proportion of females in this sector (as a percentage of the whole female population in the 15 to 54 age group) occurred between 1881 and 1891, they still accounted for a marginally greater proportion of this groups population than in 1861 or 1871.

MIGRATORY TRENDS IN THE VALE OF LEVEN: 1861-1891 . CONCLUDING REMARKS

In migration studies, by virtue of their content, there can be an understandable tendency to under-estimate stability and persistence in a population, when attention is focused on stream and counter-stream, net inflows and net outflows. Far from regarding a population as sedentary unless 'pushed' or 'pulled' observers could be forgiven for thinking that migration studies imply the opposite; that people are regularly on the move unless there is a very good reason for them to remain in one place.

Neither extreme adequately represents the reality of migration. Geographers and Sociologists categorize and generalize; they

create typologies around a mass of individual decisions which were in turn influenced by attitudes, values and behaviour as perceived at particular points in time and space. If such categorization is to have any meaning the elements which allow the formation of typologies must be clarified, but even this is not enough. Typologies of migration cannot be static, they have to incorporate dynamic aspects which recognise the importance of inertia in migration. There can be no doubt that the factors which were operating in the Vale of Leven in the second half of the 19th century made the population relatively prone to migration. Once such a motion is in operation, even when the factors which prompted that motion begin to militate against movement, the population flows will not adjust immediately to order. This appears to contradict a statement made earlier about the population being alive to economic and industrial change and responding accordingly. There is no doubt that in the long term; the population does adjust to conditions in a way that can be measured across the census interval of ten years, but it does not happen rapidly nor immediately, except in the most extreme cases. It was however more likely to adjust relatively quickly in Victorian times given the free play which industrial capitalism had then. Net migration to and from the Vale of Leven mimics industrial fortunes as figure 11:1 implies because crude measurements, of 'migrant' and 'local' population shown in this figure do not consider outflows and inflows, but inflows minus outflows. There were for example strong outflows when the industry appeared to be doing well and substantial inflows when it was doing less well. The balance however was the expected one; net outflows over difficult times, net inflows over more prosperous times. The factors operating in the Vale of Leven at this time, the single industry employment; the lack of attachment to a particular house or to the villages themselves; the inability to support oneself without regular employment and the knowledge that other places within easy reach might provide work of similar nature; all meant that the Vale's population was chronically tuned in to migration. Typologies of migration must look beyond mere net-migration to embrace

migration per se. The recognition that migration streams produce counter-streams is an obvious example of looking further than mere head counts. Similarly it should be acknowledged that once the migratory habit has been acquired and friction is reduced, less force, sometimes no perceptible force at all, is needed to propel the population.

The migration to and from the Vale was overwhelmingly economic in character, although the Irish element had an impelled dimension, a legacy of the potato famines of the 1840s. Lack of alternative job opportunities acted against remaining when times were bad and the abundant unskilled and female jobs which were created in prosperous climes acted as a spur to such persons encouraging them to come into the Valley.

Local evidence, particularly from newspapers, and evidence of Victorian working conditions in general, suggests that employment cycles were often very short term or seasonal and consequently their full impact cannot be picked up by the census which can highlight only relative long term change. An extremely narrow industrial base allowed no subtle switch in employment to take place. As was demonstrated in Chapter 8, the alternative to migration was acceptance of underemployment and a move into the casual employment sector. House owning, or long term renting of accommodation was not a consideration which most factory labourers would have had on any list of reasons which may have persuaded them to stay put. Such problems belonged to those who were less likely to lose their jobs in any case. It would be wrong to think of Victorian unemployment in present day terms. It was often only after a considerable period of time had elapsed that the labourer might begin to realise that his or her employed days were being overtaken by idle ones; that there were longer spells of inactivity punctuated by smaller periods of work, rather than vice-versa. When a long awaited up turn in fortunes failed to materialize, lacking the means to pay rent, with no money being supplied by children working in the same industry or from boarders who had moved elsewhere, with few

family ties in the locality and the rumour of work in towns not too far away, it was then that the move was made.

Many people were born, brought up and lived out their lives in the Vale of Leven of Victoria's reign. Just how many came into that category, or how trends in this respect changed it is impossible to quantify. By comparing proportions or percentages of locals to migrants can be misleading in this situation where the population was growing so rapidly and a good deal of it due to in-migration. There were more and more 'local' born people in the population at each census, but the increases in this sector were being matched by net in-migration and the persistence of 'lifetime' migrants. By comparing the estimated number of local born males under 30 years old present in 1861 to the number of local males in the 30 to 60 year old age cohort in 1891 there is a shortfall of around 1,200 to 1,500 people. Some of this is accounted for by the death rate, especially high amongst infants and young children, the rest being due to not insubstantial out-migration over thirty years. Some locals recorded in 1891 will of course be returnees, quite likely over such a time span and in the later stages of the life cycle.

A short or erratic employment cycle leading to short and erratic mobility patterns undetectable in the census would enhance the possibility that a 'local' or a 'migrant' picked up at one census could have been away and back again on several different occasions before being recorded as present at the next census. What can be stated with confidence is that, despite inevitable local persistence migration was extremely common in the Vale of Leven. Losses of three or four in ten people in the mobile groups over ten years have been shown to be not uncommon, and this is for 'local' born people. One is reminded again of the phrase 'those who were the last to arrive were the first to leave' (Pooley 1979.b). 'Non-natives' must have been even more migratory, but this cannot be measured as 'migrant' shortfalls or increases are 'net'. Common sense would suggest that if ten migrants are present at one census, and ten in the same group are present at the next census then given the local behaviour pattern,

between five and seven of them, at least, will have arrived in the inter-censal period, replacing re-migrants.

It may be wrong to infer that a daily or weekly tide of migration took place, but each ten year period did see a very substantial minority of adult 'local' born people leave and a high turnover in the 'migrant' population, not including movements within or between local villages. The latter movement was quite common to judge from the many enumerated in Bonhill parish (Bonhill, Alexandria and Jamestown) but born in Cardross (Renton) and vice versa. The overall impression is of a large, generally unskilled pool of labour responding to the demands of a loose association of like industries which straddled the River Leven from Jamestown in the north to Renton in the south. Intra-village as well as inter-village mobility was also quite common. However, such was the compact nature of both villages and works that it is difficult to envisage any one other than those living at the extreme end of the linear agglomeration of settlements and working at the other end would gain much time from a move closer to their place of employment. Exceptions to this, could be the result of the toll bridge linking Alexandria to Bonhill and Jamestown. Pedestrians, as well as carts and carriages were charged and this was a continuing source of antagonism between workers and the feuholder. What this long running dispute did highlight was that large numbers of people did live in one village but worked in another. Another reason for living very close to ones place of employment was if hiring was done on a daily basis: but no hard evidence either way has come to light for these villages. Movement to and from the Vale was often to and from settlements which offered similar types of employment. Evidence of a 'conservative' rather than an 'innovative' section of the migrant stream. Birthplaces of migrants living in the Vale provides proof of selection by perceived like employment prospects, but this is explored more fully in Chapter 14.

FIGURE 11:3 - 'Observed' Numbers of 'Native' and 'Non-Native' by Age Cohort: Males; Vale of Leven 1861 to 1891

DATE		AGE COHORT				TOTALS
		15-24	24-34	35-44	45-54	
1861	Native	512	261	99	94	966
	Non-Native	549	471	398	277	1695
	TOTAL	1061	732	497	371	2661
1871	Native	550	310	136	75	1071
	Non-Native	512	385	451	292	1640
	TOTAL	1062	695	587	367	2711
1881	Native	979	407	195	85	1666
	Non-Native	919	548	425	548	2440
	TOTAL	1898	955	629	633	4106
1891	Native	1056	469	344	164	2033
	Non-Native	712	767	689	431	2599
	TOTAL	1768	1236	1033	595	4632

FIGURE 11:4 - 'Observed' Numbers of 'Native' and 'Non-Native' by Age Cohort: Females Vale of Leven 1861 to 1891

DATE		AGE COHORT				TOTALS
		15-24	25-34	35-44	45-54	
1861	Native	653	320	172	137	1282
	Non-Native	619	436	470	321	1846
	TOTAL	1272	756	642	458	3128
1871	Native	749	349	174	129	1401
	Non-Native	598	487	493	345	1923
	TOTAL	1347	836	667	474	3324
1818	Native	989	447	252	139	1827
	Non-Native	1292	612	542	560	3006
	TOTAL	2281	1059	794	699	4833
1891	Native	1067	467	400	267	2201
	Non-Native	1201	963	600	652	3416
	TOTAL	2268	1430	1000	919	5817

FIGURE 11:5 - Expected Survivorship: Males; Vale of Leven 1861 to 1871; 1871 to 1881; 1881 to 1891

DATE			AGE COHORT (AGE AT LATER DATE) 25-34	35-44	45-54
1861 to 1871	Native	1	405	206	78
		2	505	258	98
		3	512	261	99
	Non-Native	1	434	373	315
		2	542	468	392
		3	549	471	398
	TOTAL	1	839	579	393
		2	1047	726	490
		3	1061	732	497
1871 to 1881	Native	1	453	255	112
		2	543	307	134
		3	550	310	136
	Non-Native	1	422	318	372
		2	505	381	446
		3	512	385	451
	TOTAL	1	875	573	484
		2	1048	688	580
		3	1062	695	487
1881 to 1891	Native	1	802	333	160
		2	966	403	192
		3	979	407	195
	Non-Native	1	752	450	348
		2	908	542	419
		3	919	548	425
	TOTAL	1	1554	783	508
		2	1874	945	611
		3	1898	955	620

FIGURE 11:6 - Expected Survivorship: Females; Vale of Leven 1861 to 1871; 1871 to 1881; 1881 to 1891

DATE			AGE COHORT (AGE AT LATER DATE) 25-34	35-44	45-54
1861 to 1871	Native	1	517	354	136
		2	645	316	170
		3	653	320	172
	Non-Native	1	489	244	372
		2	611	432	463
		3	619	436	470
	TOTAL	1	1006	598	508
		2	1256	748	633
		3	1272	756	642
1871 to 1881	Native	1	617	288	143
		2	740	346	172
		3	749	349	174
	Non-Native	1	493	401	407
		2	589	481	486
		3	598	487	493
	TOTAL	1	1110	689	550
		2	1329	827	658
		3	1347	836	667
1881 to 1891	Native	1	810	366	206
		2	975	442	249
		3	989	447	252
	Non-Native	1	1038	798	624
		2	1279	971	759
		3	1292	983	748
	TOTAL	1	1848	1158	810
		2	2254	1413	988
		3	2281	1430	1000

NOTES

1. See Chapter 3.

2. Because the population was young and swollen with migrants it may have out-stripped the county rates. Flinn also suggests that birth rates were higher in such small settlements.

3. Based on sample estimates.

4. Born in the three local parishes at Bonhill, Dumbarton and Cardross.

5. Born outwith the three local parishes.

CHAPTER 12: MIGRATION AND DUMBARTON

INTRODUCTION

As a long established burgh with central place functions, Dumbarton might have been expected to contain a substantial number of people who were not immediately 'local' in origin, but who came from Dumbarton's hinterland and beyond, including traders, merchants, artizans and craftsmen. But Dumbarton was left behind in the first phase of industrialization and most early 19th century migrants to this part of Dunbartonshire were flocking to the Vale of Leven and not to the royal burgh.

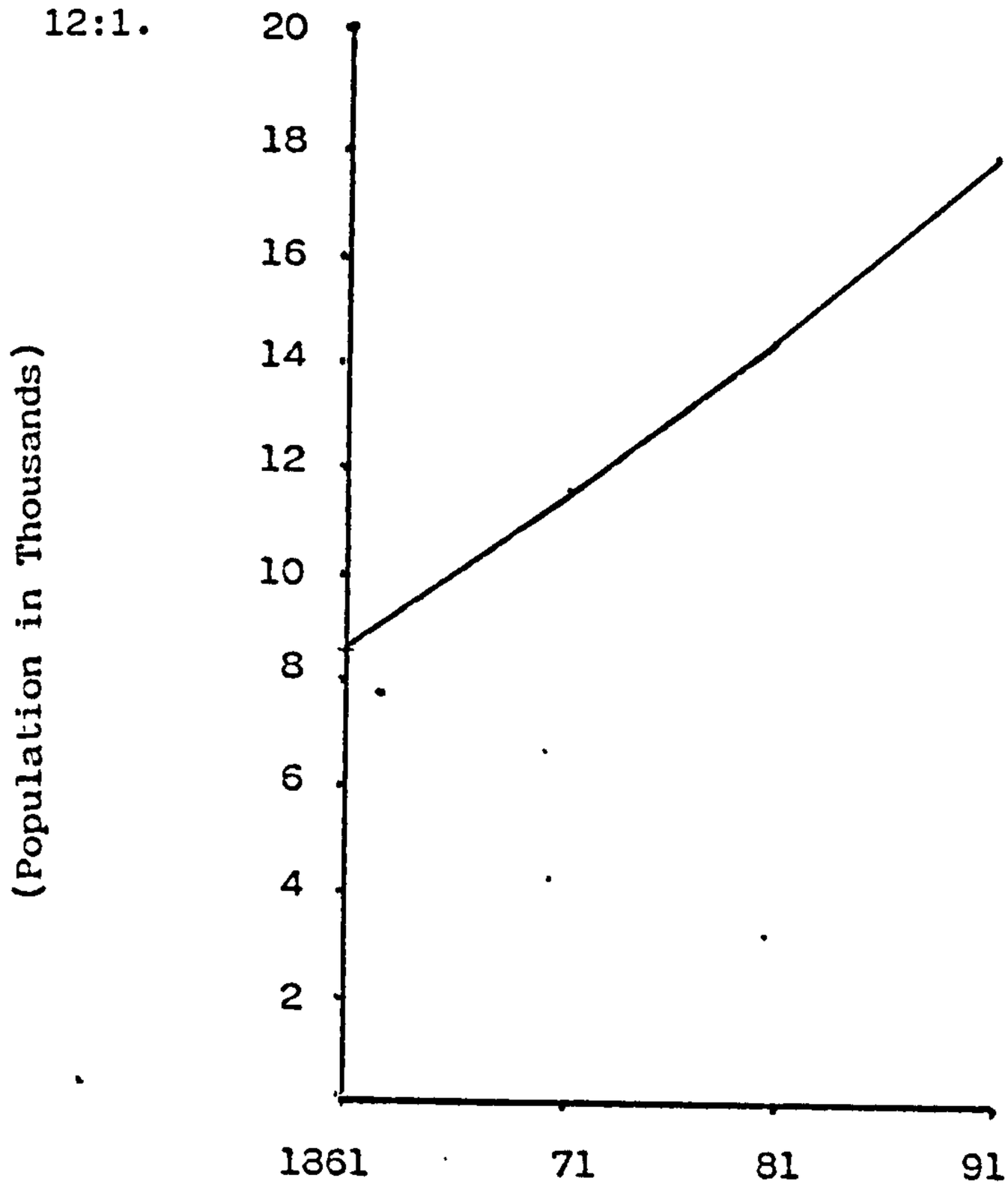
By 1861, the Vale had established itself in the vanguard of bleaching, printing and dyeing industries in Scotland and it was attracting in-migrants although its largest proportional influxes had been in the earlier decades of that century.

In contrast, Dumbarton's industrial lifeline had been badly frayed during that time, and it was only in the 1850s with the establishment of shipbuilding in the burgh that it began to interest large numbers of migrants. The economic fulcrum of the sub-region moved once again to Dumbarton as the vigorous second phase of industrialization arrived; shipbuilding, engineering and foundry work eclipsing the long established, but ailing textile processing industries of the Leven Valley proper. Industrial growth was to continue more or less unchecked throughout the 1861 to 1891 period and it led to a less equivocal population growth than in the Vale, as figure 12:1 shows. The steep gradient being maintained throughout, so that in thirty years Dumbarton's population rose from c 8,500 to 17,800. The speed and immediacy of growth and the demand for labour ensured that there were always more migrants than local born people resident in the burgh throughout the period. With 1861 as the starting point, as figure 12:2 shows the growth of the migrant

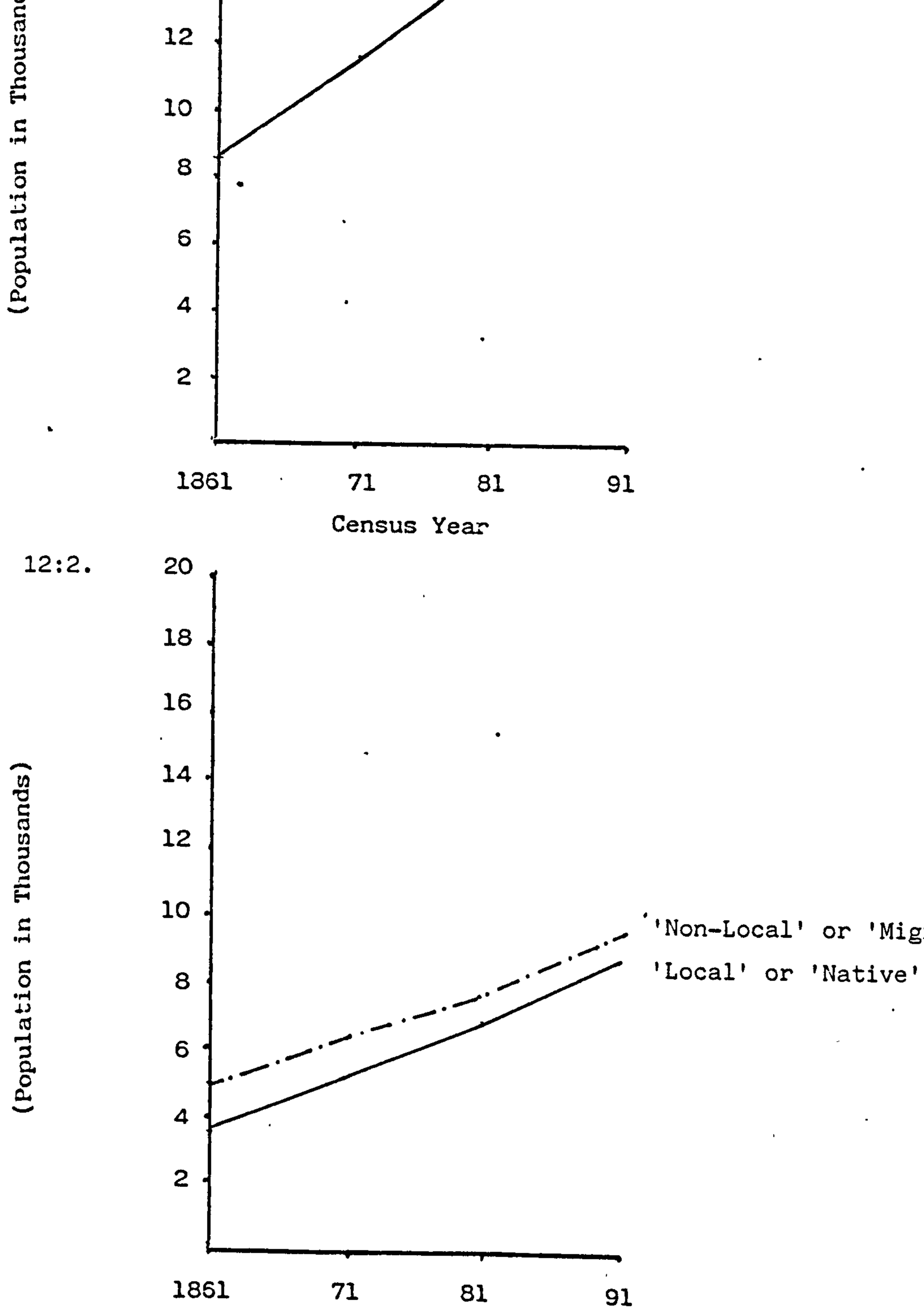
Figure 12:1 - Population Growth - Dumbarton 1861-1891

Figure 12:2 - Population Growth: 'Local' and 'Non-Local' born Dumbarton 1861-1891

12:1.



12:2.



population almost paralleled indigenous growth, but after 1871 there was an almost imperceptable narrowing of the gap. The message appears to be clear; Dumbarton continued to attract migrants and breed its own population throughout the period; but this is an over-simplified view of the burgh's population dynamics over the latter part of the century, the nature of which is explored more fully below.

Just how dependent Dumbarton was on its migrants can be gauged by estimating what the natural increase would have been over the four census years, assuming Dunbartonshire's rates of increase and zero migration. The population of c 8,440 in 1861 would have risen to c 9,668 by 1871, c 11,002 in 1881 and 12,663 in 1891; around 5,200 people less, in 1891, than were actually present and indicative of lively net in-migration. While figure 12:2 describes the almost parallel growth of 'native' and 'non-native' population what it does not reveal is that the bulk of 'locals' were children; many if not the majority, were children of migrants. Figure 9:1 illustrates how bottom heavy the local born population structure was, a clear indication that in-migration was still vitally important to Dumbarton's population growth. With many 'local' born children the sons and daughters of migrants their ties with the burgh were mainly economic and they might easily move elsewhere. Even as late as 1891 the situation was still volatile, with emigration increasingly becoming an option taken up by those who had caught the migratory habit.

DIFFERENTIAL MIGRATION

The fact that migration to Dumbarton was primarily economic, with the prospects of employment attracting large numbers of incomers, is underlined by the pattern of differential migration recognized here. Most in-migrants in the mobile age groups were men who had come to work in heavy industries (in direct contrast to the Vale of Leven where women were attracted in larger numbers).

This differential was starkest in 1861, when there were five men for every four women in the 15 to 54 age group, but because, like the Vale, there were more local born women in this group than local born men, throughout the four samples taken, 1861 to 1891, the differential was eroded slightly (whereas in the Vale it had been accentuated as the differential among migrants was in favour of women too). Taking only 'in-migrants' in the middle life cycle stages, the ratio was four to three in favour of men. Thereafter the differentials for the total population in this group were very small. The differential in favour of men among 'non-natives' was five to four in 1871, thirteen to twelve in 1881, and seven to six in 1891. The wider gap at the earliest census probably indicates a recent upsurge of in-migration, especially by single men or those who had left wives and families temporarily behind. It also of course indicates that this level of in-migration was not sustained through later census years.

Dumbarton was a relatively new destination for migrants in the mid 19th century, and while its migrant stream cannot be regarded as 'pioneering' in the way that this word is used in a North American context for example, it had elements in it which suggest that men were apt to move on their own until more was known about the availability of work and lodgings. Such a situation naturally favoured the younger, single man for whom family considerations were less important. It may be too that the dire housing situation in Dumbarton, which had important social ramifications and is a recurring theme here, discouraged family moves. The in-migration by young single men was most likely to have been at its height for this period around the 1861 census benchmark which has yielded the greatest disparity in the ratio of male to female migrants. A point further underlined by the high proportion of male migrants in the 15 to 54 age group who were in the youngest ten year age cohort (15 to 24) and more likely to be recent, single migrants. For of all male migrants in this group over one third were in the youngest of the four ten year cohorts in 1861. Thereafter this porportion rapidly declined

to around a quarter, that is, the expected population if an even distribution over the four age cohorts is assumed. The trends among young and mobile adults are most important indicators in migration studies, and it is to this group that attention now turns.

MIGRATION OF YOUNG ADULTS

The remarks made in the first two paragraphs under the equivalent heading for the Vale of Leven apply equally here and do not need repetition. Suffice to say that figures 12:3 and 12:4 show the 'observed' figures as defined earlier, while figures 12:5 and 12:6 show expected survivorship at three different levels; the middle figure being the best estimate of survivorship whilst the others represent the most optimistic and pessimistic rates respectively. As with the figures for the Vale of Leven, they are analysed in three ways, by taking:

i. total figures for 'locals' and 'migrants' for each census year for the whole 15 to 54 age group;

ii. the 15 to 44 age group as one census, following it through to the next census where it becomes the 25 to 54 age group, and;

iii. the migrant stream and breaking it down into its consituent parts of Irish, 'Nearby Scots' and 'Others.

Consideration of the separate strands of the migrant stream is developed until the ethnic groups are discussed in later chapters.

FIGURE 12:3 - 'Observed' Numbers of 'Native' and 'Non-Native' by Age Cohort: Males; Dumbarton 1861 to 1891

DATE		AGE COHORT				TOTALS
		15-24	25-34	35-44	45-54	
1861	Native	190	136	82	59	467
	Non-Native	712	780	371	212	2075
	TOTAL	902	916	453	271	2542
1871	Native	412	153	67	72	704
	Non-Native	637	916	647	335	2535
	TOTAL	1049	1069	714	407	3239
1881	Native	675	237	130	81	1123
	Non-Native	600	800	724	562	2686
	TOTAL	1275	1036	854	643	3809
1891	Native	1019	422	160	58	1659
	Non-Native	903	1100	648	750	3401
	TOTAL	1922	1522	808	808	5060

FIGURE 12:4 - 'Observed' Numbers of 'Native' and 'Non-Native' by Age Cohort: Females; Dumbarton 1861 to 1891

DATE		AGE COHORT				TOTALS
		15-24	25-34	35-44	45-54	
1861	Native	190	186	127	41	544
	Non-Native	408	616	372	195	1591
	TOTAL	598	802	499	236	2135
1871	Native	310	225	131	84	750
	Non-Native	521	658	554	310	2043
	TOTAL	831	883	685	395	2793
1881	Native	664	271	149	116	1200
	Non-Native	659	670	631	521	2481
	TOTAL	1323	941	780	637	3681
1891	Native	997	433	202	151	1783
	Non-Native	752	976	665	651	3044
	TOTAL	1749	1409	867	802	4827

Figure 12:5 - Expected Survivorship: Males; Dumbarton 1861 to 1871; 1871 to 1881; 1881 to 1891

DATE			AGE COHORT (AGE AT LATER DATE)		
			25-34	35-44	45-54
1861 to 1871	Native	1	141	101	61
		2	187	134	81
		3	190	136	82
	Non-Native	1	527	577	275
		2	700	770	364
		3	712	780	371
	TOTAL	1	668	678	336
		2	887	904	445
		3	902	916	453
1871 to 1881	Native	1	325	121	53
		2	406	151	66
		3	412	153	67
	Non-Native	1	503	722	511
		2	628	906	627
		3	637	916	647
	TOTAL	1	828	943	564
		2	1034	1057	703
		3	1049	1069	714
1881 to 1891	Native	1	627	185	101
		2	664	234	128
		3	675	237	130
	Non-Native	1	568	624	565
		2	589	790	712
		3	600	800	724
	TOTAL	1	995	809	666
		2	1253	1024	840
		3	1275	1037	854

Figure 12:6 - Expected Survivorship: Females; Dumbarton 1861 to 1871; 1871 to 1881; 1881 to 1891

DATE			AGE COHORT (AGE AT LATER DATE)		
			25-34	35-44	45-54
1861 to 1871	Native	1	141	138	97
		2	187	183	125
		3	190	186	127
	Non-Native	1	304	456	272
		2	401	608	366
		3	408	616	372
	TOTAL	1	445	594	369
		2	588	791	491
		3	598	802	499
1871 to 1881	Native	1	245	178	103
		2	306	222	129
		3	310	225	131
	Non-Native	1	411	519	438
		2	513	651	545
		3	521	658	554
	TOTAL	1	656	697	541
		2	819	873	674
		3	831	883	685
1881 to 1891	Native	1	518	211	116
		2	653	268	147
		3	664	271	149
	Non-Native	1	514	523	493
		2	648	661	620
		3	659	670	631
	TOTAL	1	1032	734	609
		2	1301	929	767
		3	1323	941	780

a. MALES

In the previous section, 1861 was highlighted as being the census year of the four sampled which bore witness to an intense in-migration of young males. The impact which that had on Dumbarton is probably best illustrated by comparing the ratio of 'non-natives' to 'natives' in the 15 to 54 age group. From the sample it is estimated that there were c 444 'in-migrants' for every 100 'local' males in this group at the 1861 census. Thereafter the ratio decreased fairly rapidly to 360:100 in 1871, 239:100 in 1881, declining more slowly in the succeeding decade to a ratio of 205:100 by 1891; which is a phenomenally high 'migrant' to 'local' ratio. Over the thirty year period the total number of males in this group doubled (from c 2,542 to c 5,060), the number of in-migrants going up by around 75% of their 1861 total (from c 2,075 to c 3,401) but the number of 'locals' almost quadrupling (from the very small figure of c 467 in 1861 to 1,659 in 1891). So while, relatively, the local born population did grow rapidly it was from such a small base in 1861 that they still accounted for less than half the numbers which were present in the migrant sector in 1891.

Both sets of figures above do suggest a healthy and enduring in-migration as well as the retention of those who were locally born over the whole period. The 'follow through' method described in Chapter 7, and used in the investigation of the Vale's migration trends in the previous chapter, uncovers a more complex and dynamic structure when used here, than the gross figures suggest.

The overall trends in the 15 to 44 (25 to 54) population is summarized in figure 12:7 below and is derived from figures 12:5 and 12:6.

Figure 12:7 - Estimated gains and losses by migration of the 15 to 44 year old male population followed through to the next census where they become the 25 to 44 age group. (Expressed as percentages)

DATES	'LOCALS'	'MIGRANTS'
1861-1871	-27	+ 3.4
1871-1881	-28	- 3.9
1881-1891	-37.6	+19.5

The table above shows that far from being a simple situation where there is retention of the 'local' population and migrant accretion, very big losses were sustained in the local mobile, male population; in all cases over one in four locals had gone by the following census. In the 1861 to 1871 and the 1881 to 1891 decades there were increases in the migrant population; the former was fairly slight and did not make up for the loss of 'local' born males (but it did compensate for approximately just over half of that loss, remembering that 'migrant' numbers were so much bigger than 'local' numbers in 1861). In the latter decade the one in five increase in 'migrant' numbers just compensated for the very high number of local born people moving elsewhere, and so over this decade the 'follow through' group recorded a small net gain in population overall.

In the middle decade losses were sustained by both migrant and local streams. It appears that in the first decade losses were fairly evenly sustained across this broad age group, but in the latter two decades the biggest loss was recorded in the younger cohorts.

The conclusion must be that the population, under these circumstances, was very migratory. Beyond this, confidence in Dumbarton's economy was probably not as high in the middle decade (1871 to 1881) than it was in the decades either side. This would appear to be borne out by the numbers employed by Denny Brothers at their Leven shipyard. If 1860s index of the number employed is taken as 100 (actual figure 555) then the index rose to over 240 by 1863 and only dipped below 200 in one year of the 1860 to 1870 decade, whereas in the years 1876 to 1879 inclusive the index was below 200. Thereafter the figure never declined to this level within the period of this study (Pollard and Robertson 1979; Table P191). Confidence may have been restored in the latter decade, but the turnover of population was extremely high; a loss of 37% of 'locals' was probably matched by at least a similar 'migrant' loss, made up for by a large influx of new migrants.

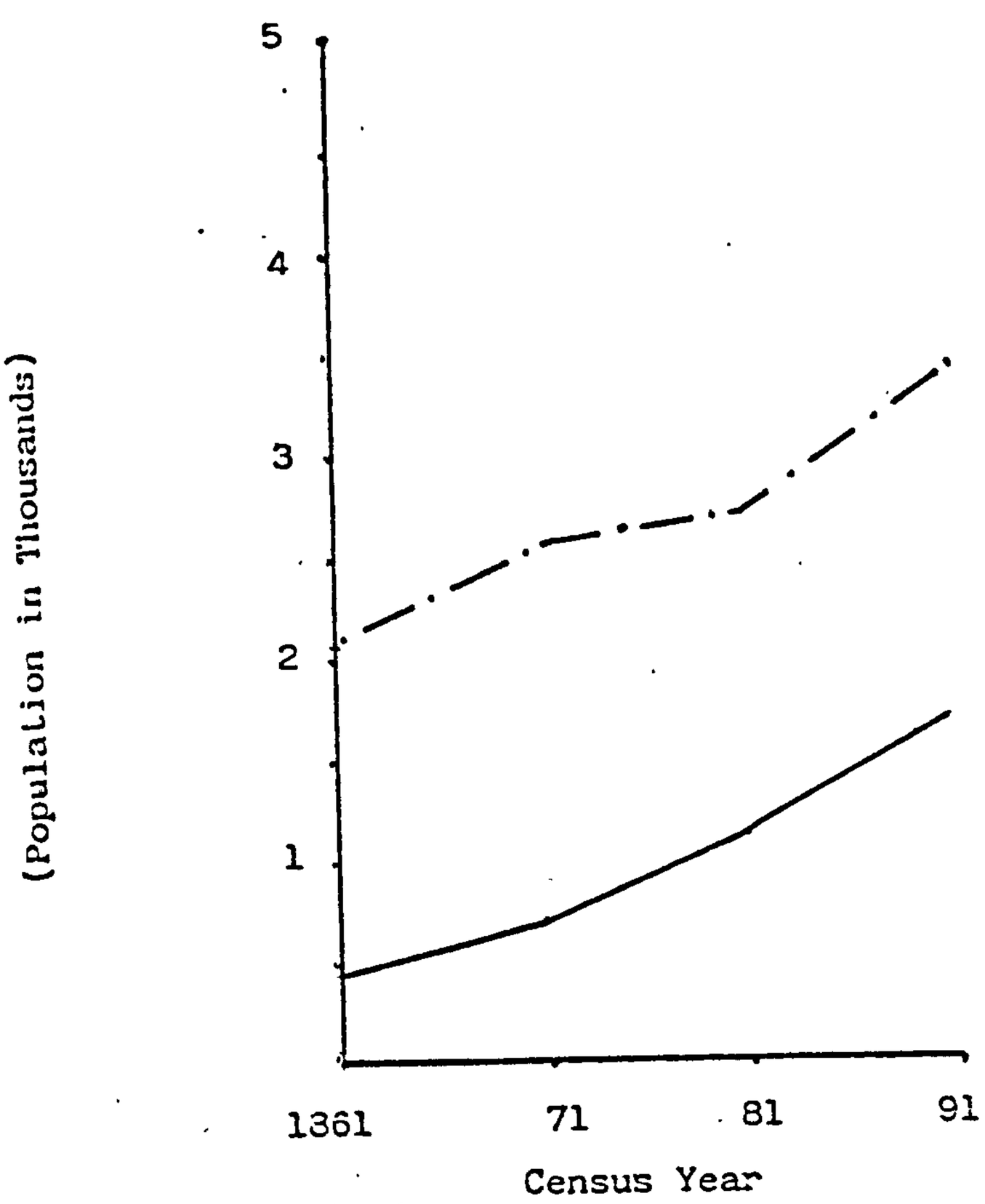
The figures show that even a seemingly successful agglomeration of industries can sustain a steady turnover of its workforce, and that a simple model which suggests successful industry retains and attracts population while a less successful one loses population, is untenable for 19th century industry in the West of Scotland. Dumbarton was only one of a network of locations where heavy industry, principally shipbuilding, was carried out; communications along the Clyde were good and became cheaper as the century drew towards its close; housing was poor and expensive, unlikely to act as an incentive to the labouring classes; and even the most minor of difficulties or industrial disputes might lead to out-migration. Osborne (1980) has identified just such an instance in Dennystown in 1865 when by the end of a joiners' dispute 'most of the workers had left the area to seek jobs elsewhere' (P9).

Overall, net in-migration continued throughout the period, influxes in the 15 to 54 year old age group, missed at subsequent censuses using the 'follow through' method, ensured this. Again the growth was not as even as the overall figures suggest. Compare figure 12:2, which shows 'local' and 'migrant' population growth to figure 12:8 below which shows estimates of the 'local' and 'migrant' population growth among 15 to 54 year old males. The latter figure describes the slackening of net male in-migration over the 1871 to 1881 period which is also most apparent from the percentage of male migrants (15 to 54) in the youngest age cohort (15 to 54) which was 25.3% in the 1871 c 22.3 in 1881 and 26.5% in 1891.

b. FEMALES

The in-migration of females to Dumbarton cannot be regarded as independent in the same fashion as female migration to the Valè of Leven, there being far fewer job opportunities for them in the burgh. Many females must have come as part of families, whether as wives or daughters, without seeking any individual economic gain from the move. This is possibly reflected in a gradual and steady growth in the numbers of female migrants in the 15 to 54 age group, which amounted to c 400 to 600 per decade. Like their male counterparts their ratio to 'local' born women in the same age group declined steadily. 'Local' growth rates were outpacing 'migrant' rates albeit from a very much smaller initial base. The pattern may have been the same for both sexes but the ratios were very different; 292 'migrant' women for every 100 'local' born in 1861, dropped to 170, to 100 by 1891, compared to figures of 444 and 205 respectively for male 'migrants' to 100 male 'locals' at the same dates. These estimates not only highlight the important role of in-migration in peopling Dumbarton, but contrast the available job opportunities, showing that the burgh was a much more attractive destination for males.

Figure 12:8 - 'Local' and 'Non-Local' Born Population Growth 15-44 Year Old Males; Dumbarton 1861-1891



Using the 'follow through' method, the table below, figure 12:9 was drawn up to compare the 15 to 44 year old females at one census with the same group (25 to 54 years olds) at the next census.

	'LOCALS'	'MIGRANTS'
1861-1871	-12.7	+10.7
1871-1881	-18.4	+ 6.6
1881-1891	-26.4	+18.8

This indicates that local women were less migratory than their male counterparts, certainly independent migration to other areas of heavy industry held no great attraction for them. As in the male sector, there was a great turnover of population, or resurgence in migration, in the 1881 to 1891 period, with the biggest loss of locals, but the biggest gain in net-migration over the three decades occurring here. Where the patterns differ are in perceptible net gains made across each decade by the 'non-native' group, although it is interesting to note that the smallest gain was made over the 1871 to 1881 decade when the net gain in the 'migrant' group probably just failed to cover the loss of 'local' born women in this group. In both the earlier and later decades the net influxes of c 10.7% and c 18.8% to the 'non-native' group, move than covered any loss caused by out-migration of local women.

In the 15 to 24 group, missed at subsequent census by the 'follow through' method, the proportion of 'migrants' in this group compared to the total number of 'migrants' in the 15 to 54 age group, changed remarkably little throughout the

period. The highest percentage of 'migrants' in this youngest cohort was c 26.2% (in 1881) and the lowest, c 24.7% (in 1891), statistically insignificant differences, but testament to the steadiness of female net in-migration to Dumbarton.

SUMMARY OF BROAD MIGRATION TRENDS: DUMBARTON 1861-1891

MALES

i. Although the ratio of 'migrant' to 'local' among those in the mobile age ranges declined steadily over the period, the ratio was still high by 1891 at around 2:1. The ratio had been extremely high, over 4:1 in 1861, which indicated a recent and rigorous 'in-migration' around that time.

ii. Migration was not all one way; despite the success of Dumbarton's impressive array of heavy industries, at least one in four 'locals' were lost due to out-migration when the 15 to 44 year old age group were followed through to the next census.

iii. Among 'non-natives in the same 'follow through' group there appeared to have been slight gains in the 1861 to 1871 decade, but a slight loss in the 1871 to 1881 decade. The net gain of in-migrants in the 1881 to 1891 period was less equivocal with an estimated increase of 19.5%.

iv. As it is safe to assume that more 'non-natives' will move away than 'natives', the large drop in 'local' numbers over the ten years from 1881 (c 37.7%) combined with the large gains in the 'non-native' sector, indentifies a sharp increase in population turnover in that decade.

v. The in-migrants in the 15-24 year old age group, missed at subsequent censuses using the 'follow through' method, ensured a net gain of 'migrants' at every census. However by 1881, the number of migrants in this group was now less than the number of locals, reiterating the slackening of migration around this time. The substantial increases sustained in this cohort and across the whole 15 to 54 age range in the 1881 to 1891 period combined with the findings in (iv) above, signalled a new tide of net in-migration.

FEMALES

i. Female in-migration was less independent than male in-migration due to the lack of female job opportunities in the burgh.

ii. Paradoxically smaller shortfalls in the local born group which followed through to the next census showed that 'local' born women were less migratory than their male counterparts.

iii. Migrant gains were made in all three decades (using the 'follow through' method). Although starting from a smaller base (in 1861) than males there was not a net out-migration recorded. The trends did to a certain degree parallel the male experience with the smallest gains made in the 1871 to 1881 decade and the largest in the 1881 to 1891 decade.

iv. The steady gains made across the whole middle life cycle stages at each census, combined with the consistent proportion of migrants in the 15 to 24 age group (which being the most migratory in character under most circumstances, is probably the most volatile) serves to illustrate the less unpredictable, less economic but more gradual nature of female migration to Dumbarton emphasising the point made in (ii) above.

MIGRATORY TRENDS IN DUMBARTON: 1861 TO 1891
CONCLUDING REMARKS

The comments made in this study concerning migrational inertia and the acquiring of the migration habit, which were directed at the situation in the Vale of Leven (see preceding chapter) are perhaps even more acutely pertinent here. A group of industries, shown to have enjoyed a long term period of success would be expected to attract, and to hold on to, migrants and yet over the 1861 to 1891 period the population turnover was very high. Migrational inertia is certainly apparent, but just why it should lead to such a noticeable turnover in population needs further explanation.

Doubtless the dire housing situation in Dumbarton had a part to play in population mobility. People attracted by job prospects found that they were in competition with many others for adequate accommodation; even as late as 1891 24% of the sample population lived in the High Street, a street some 600 yards (536 m) long. As the housing stock was supplemented on the burgh's periphery, which prior to 1891 was, with two notable exceptions, a patchy and piecemeal accretion, it did little to ease the plight of the labourer or 'lower factory' worker. The larger houses were built for the professional groups such as those in Kirktonhill or Bonhill Road (see figure 1:4), the less grandiose ones, at Dennystown and Knoxland, for the emergent labour aristocracy. So by a process of filtering some of the overcrowding and population densities which were being experienced in the central area of the town were being assuaged, but continuing population pressure from in-migration and a young, growing 'local' population ensured that there was no appreciable difference in the lot of most industrial workers.

Perhaps as important, although not completely verifiable until other town studies in this region are carried out, was Dumbarton's location in the industrial web and the opportunities which this presented. On Clydeside, between Greenock on the south bank and

Glasgow itself, served by Clyde steamers as well as by the rapidly growing and improving railway network, transport was not a problem for someone wishing to move within the industrial West of Scotland. Local migration or very short distance moves had been described as being within half a days walk for early migrants to factory villages (Lockhart 1986). By the late 19th century, half a days journey could take a person from one end of the Western Industrial Belt to the other, from Motherwell to Dumbarton and beyond. The only problem being the cost of transport. J & G Thompson, the shipbuilders of Govan, moved their works to a greenfield site in 1872 and in that way the town of Clydebank was born. Not all of those who worked in this yard lived in Clydebank, initially of course, very few could have. It was the existence of the railway which facilitated the Thompson move in the first place and which inaugurated working class railway commuting in the West of Scotland.

A move from Dumbarton to Motherwell or Hamilton, for example, would not be done on a daily basis, but unless destitute, the cost of such a journey was not prohibitive if someone intended to find work and make his home at his workplace. What helped to reduce friction and make moves more likely was the ability to find similar types of work throughout the industrial west. It has already been suggested that for the Vale of Leven people were liable to circulate among places which might provide them with familiar types of work. This conservatism, if it applied to the increasingly unsteady textiles sector, was even easier to practice if one worked in the healthy heavy industries, notwithstanding the fact that there may appear to be little to suggest the need for a move, at least to late 20th century observers, save the cyclical nature of shipbuilding which required caulkers, platers and riveters early in a contract and carpenters, for example later on.

There may have been conservatism in the choice of destination, but there appeared to be little of that trait in many of the people when it came making a decision to move. This habit

perturbed industrialists for it allowed the workers to exercise some control over whom they sold their labour to, especially in times when this labour was urgently needed. It may have been just such an experience which led Peter Denny and doubtless other industrialists elsewhere, to renew an interest in providing housing for the skilled labour force, or at least to encourage such organizations as would provide housing, like the temporary building societies. The spatial ramifications of the growth in skilled workers housing is examined in subsequent chapters.

A COMPARISON OF MIGRATORY TRENDS: THE VALE OF LEVEN AND DUMBARTON

One of the purposes of this section is to attempt to isolate general trends, which may be applicable to industrial regions in the second half of the 19th century, from those which are peculiar to either Dumbarton or the Vale's villages. While the latter part of this exercise may appear to be of limited use in the wider context it is by so doing that an understanding of the mechanics of migration is built up. For if a particular trend can be defined in stark relief to the general pattern then the reasons for that peculiarity can be sought at source.

The following broad generalisations can be made for both sexes and for both locations. The population was both mobile and migratory especially in the middle stages of the life cycle. Following the 15 to 44 age group through to the next census always produced substantial shortfalls in the 'local' born group which could not be accounted for by high death rates. The mean loss rate over ten years, after an age specific death rate had been applied, was of between two and four 'local' born individuals in ten. Only local born females in Dumbarton over the 1861 to 1871 period did not approximate to that mean (1.2 per 10). In the middle life cycle cohorts, from age 15 to 54, there were always more migrants than locals. Through time, the general pattern showed a decline in the ratio of migrants to locals; the exception to this being

the females of the Vale of Leven where the ratio of migrants to locals may have increased slightly over this thirty year period. The increase was not, however, the result of a steady progression. The 1881 to 1891 decade signalled an increase in population turnover.

Differential migration indicates that job opportunities were known and created an imbalance; in favour of females in the Vale of Leven where there were as many women employed as men; and in favour of males in Dumbarton where there were far more opportunities for men than women.

Many of the differences in broad migratory behaviour, both across the sexes, and across the discrete settlements owed much, but possibly not all, to the variable nature of job opportunities and to changes in the economic climate, but also to the different phases of industrialisation which were to be witnessed in this area during the second half of that century.

MALE MIGRATION

The ratio of 'migrant' to 'local' in the mobile cohorts may have shown overall decline, but the ratios for Dumbarton and the Vale were quite different. Dumbarton had according to the sample 444 male 'migrants' for every 100 'locals' in 1861, the Vale having a ratio of 175:100. By 1891, the Dumbarton ratio was still over 2:1 while the Vale's had dropped to 127:100. So while out-migration of 'locals' and 'non-locals' continued throughout the period, there was nonetheless a trend towards less dependency on in-migrants to provide a workforce. The large difference in the ratios is probably explained, partly by the relative success of either industrial base, but more importantly by the phase of industrialisation which each area was entering. Factory industry was well established in the Vale by 1861. There had been over 100 years of migration, a local population

had been established, and while growth had not been spectacular, by that date 'natives' and 'migrants' contributed about equal shares to the total population. Migration was still important as it was throughout the West of Scotland at this time, but as the industry entered late middle age it depended less on new migrants.

Industry had come late to Dumbarton by comparison; a journey from the Clyde to Loch Lomond as late as the 1840s would have found Dumbarton as a small burghal backwater co-existing in stark contrast with the burgeoning factory villages further north. It was not until the 1850s that shipbuilding began to have a telling effect on the burgh's economy. The growth of this industry and its array of ancillaries promoted a big net influx of migrants, hence the high ratio of 'non-natives' to 'natives', with one third of the 15 to 54 age group's 'non-natives' in the most mobile ten year cohort (15 to 24) is 1861.

As the period progressed it does appear as if relative industrial success or failure contributed to 'local' out-migration patterns, the net balance of 'migrants' and the decay in the 'non-native' to 'native' ratio. The 1861 to 1871 decade, already earmarked as the beginning of the end of textile processing in the Vale, saw a percentage shortfall among 'locals' of 40% and a net out-migration in the 'migrant' groups of 30% in the 'followed through' cohorts, causing overall population growth to slacken. Dumbarton did not lose as great a proportion of 'locals' (c 27%) and recorded a small net gain in the 'migrant' group of the equivalent cohorts. Over the whole 15 to 54 age group then, the Vale recorded slightly fewer migrants in 1871 than in 1861, whereas Dumbarton had around 500 more. In the 1871 to 1881 decade the shortfall in 'locals' was about the same for each area, but this time the Vale recorded a net gain in the 'non-native' group (c 14%) whereas Dumbarton recorded a slight net loss of 'non-natives'. The addition made in the 15 to 24 year old group in this decade of around 150 'migrants' may have ensured a small net gain in Dumbarton's 15 to 54 year old group overall,

but the Vale's figures were more robust with an overall gain in this group of c 800. This tends to suggest a wavering in Dumbarton's fortunes and a revitalisation in the Vale. Whatever caused the slowing of Dumbarton's 'migrant' tide, it did not receive the severe jolt dealt to the Vale of Leven in the previous decade. The problems may have been industrial as suggested by the Leven shipyard employment figures, but it is possible that other concerns made Dumbarton less attractive. The unfortunate concomitants of two decades of rapid industrial growth were overcrowding and disease. With alternative work within easy reach, even the slightest change in fortunes could compel a forcible migratory reaction, given the strong in-migratory drive of recent decades. Migrants and their children, with little to tether them to Dumbarton, could easily go elsewhere.

In the 1881 to 1891 decade both areas lost similar proportions of their 'local' born inhabitants in the 'follow through' group of c 37%. Net trends among 'non-natives' were different; Dumbarton recorded its highest influx of the period, more than making up for the loss of 'locals', whereas in the Vale arrivals kept pace with departures in the 'non-native' sector only. If it is accepted that 'non-natives' were just as likely, if not more likely, to move elsewhere than 'locals' then this decade witnessed an upsurge in migratory behaviour. Flinn (1977 Pp 464-465) has recorded an overall population loss by the Western Lowlands in this decade, a good deal of which must have been through emigration. Whether what was happening in Dumbarton and the Vale of Leven typified such regional trends, is not known. Certainly, there were weekly advertisements in the local papers describing shipping timetables, assisted and non-assisted passages to Australia, New Zealand, Canada, South Africa and the USA throughout the 1861 to 1891 period. The fact that a large loss of 'locals' was endured by two places, close geographically but industrially diverse, would imply that there was some adherence to the regional trend.

However, the influx of new migrants indicates important internal reorientation within the region too. The relationship between emigration and internal migration is difficult to quantify given the sources, and has yet to be adequately considered by geographers. Inter-regional patterns do suggest that many of the emigrants in this period were from Central Scotland. But lack of empirical research on population movements with respect to individual settlements inhibits synthesis on an intra-regional basis. It could well be that emigration stimulated intra-regional mobility by causing a demand for labour in certain areas where population had been lost. In turn, a population already migratory within a regional field of movement may have ensured that the transition from internal migration to international migration was more easily achieved than with a relatively sedentary population. Whatever the nature of the relationship, movement prompted movement, momentum increased, oscillations became bigger and possibly more frequent, the result being an acceleration in population turnover. In other words internal migration in loosening bonds, may have encouraged emigration. Emigration in turn, by leaving gaps promoted internal re-organisation.

FEMALE MIGRATION

As for their male counterparts, the ratio of 'non-native' to 'native was higher in Dumbarton than in the Vale of Leven throughout the period. This illustrates the danger of regarding job opportunities as the only yardstick to be held up against migratory trends. Local economies were very important in stimulating migration but to regard migration and economy in a type of two factor correlation is to over-state the symbiosis. Female in-migration to Dumbarton was less employment motivated than female in-migration to the Vale of Leven for there were no obvious nor easy opportunities for them in the burgh. The fact that they persisted at a higher level than in the Vale of Leven was due to their being the wives or daughters of in-migrants who had come to work in heavy industry. Their migration cannot be

classed as an independent, employment orientated one, but as their husbands and fathers were doubtless greatly motivated by job opportunities, their migration was prompted by economic motives.

The migration of women into the Vale of Leven was much more directly driven by economic or employment motives. No doubt some women did come into the dependent category, but many had come in search of work. This made them highly prone to re-migration, an attitude which influenced 'local' born women too; for the 'follow through' method suggests that the women of the Vale of Leven were the most migratory of groups in the 1861 to 1881 era. 'Local' shortfalls ran ahead of those for their male counterparts and very far ahead of those of their 'local' born sisters in Dumbarton, where the women were, over those twenty years, much less migratory than 'local' born males.

There were contrasts in the age structure of either areas' female 'migrants'. In Dumbarton the 'non-native' females in the 15 to 24 year old cohort always accounted for about one-quarter of those in the 15 to 54 year old 'non-native' group, whereas in the Vale the 15 to 24 year old cohort had around one-third of this group's population at all censuses bar the 1881 count which showed them to represent about four in every ten 'non-native' women in the 15 to 54 age group.

In-migration of young, essentially footloose, women seeking work occurred throughout the period, and accordingly the rate of out-migration was also high. The habit was acquired by the young 'local' born women too, to judge from the large shortfalls encountered in the 'local' born population which was followed through to the next census. The increase in 'non-native' numbers over this period within the 15 to 54 group was largely due to the in movement of young women in the 15 to 24 age group. This was especially true in the 1861 to 1871 and 1881 to 1891 decades. As was demonstrated in Chapter 8, these were the women most likely to be seeking employment at the printworks. Apparently as they

moved through the life-cycle they became increasingly less likely to be in regular, full-time employment, due to marriage, and therefore were more likely to move away if their husbands' livelihood was threatened. Paradoxically, the position of the male worker was liable to be less secure than than of the female, who nonetheless would have to suffer lower pay and possibly less regular employment. In addition, many young single women may have regarded their stay in the Vale of Leven as a very temporary measure, designed to provide a few years work at best.

It has been suggested, for the Vale of Leven at least, that in spite of the decline in textiles many people seemed to make a 'conservative' rather than an 'innovative' move with regard to employment; that is, in migrating there was an attempt to find familar work of the type which the migrant had been doing in his or her previous domicile. Such a choice may have been exacerbated if the family perceived a need for both men and women to work. The only places where this could satisfactorily be achieved would be in similar fields of employment, certainly not in heavy industry. And, as contacts between areas of like employment are consolidated, such 'non-innovative' moves are encouraged.

Women in Dumbarton had fewer independent economic motives either for moving to the burgh or staying in it, but their migratory trends fail to suggest that they were completely subservient to economic decisions made by males. True, for the 'local' group, both male and female, the greatest shortfall occurred over the last decade considered here; and the smallest in the earliest decade, but the shortfall was, according to sample estimates, smaller in the female sector in both the 1861 to 1871 and 1871 to 1881 decades, implying greater levels of persistence among women. Furthermore, the 'non-native' female group in Dumbarton was the only one to record increases over all three decades using the 'follow through' method. Given the chequered history of the Vale's industry in this era it is hardly surprising that shortfalls were experienced there. What is more difficult to

explain is the increase in 'non-native' females in Dumbarton across each decade identified by the 'follow through' method. One possible reason for this is that in-migration was vigorous throughout the period, for both sexes and in both locations, but given the persistence of 'local' born women, it may be that paralleling that trend women in-migrants to Dumbarton were less likely to move out again then any other group.

At no time, however, over the 1861 to 1891 period, did the number of women ever exceed those of men in the 15-54 age group in Dumbarton. It could well be that the persistence of 'native' and 'non-native' women in Dumbarton, contrasted with the migratory behaviour of their counterparts in the Vale had its roots in marriage patterns. From the women's viewpoint differentials were more favourable in Dumbarton, possibly leading to a greater persistence there, which in turn helped to avoid a chronic imbalance in favour of males.

In the Vale, with job opportunities for both sexes, economic rather than social considerations, were more dominant initially.

MIGRATION AND THE ECONOMIC MOTIVE

Throughout this chapter there has been the assumption that economic considerations were the main motive forces behind in-and out-migration. Even when industrial trends could not be unravelled with certainty, there was the implicit suggestion that net out-migration occurred during times of difficulty and in-migration during times of success. There was, of course, good reason to believe that this was the case. The clearest indications coming in the 1861 to 1871 era when the printworks' known difficulties were paralleled by the sluggishness of in-migration and a large outflow of 'local' born people, or in the levels of differential migration related to job opportunities.

However, there were indications too, that, when the population became exposed to migration or 'acquired the habit' of migration, less obvious or recordable motives were able to influence them. Just as there has been debate over the role of population trends; whether as a subordinate and dependent variable fashioned by economic and social change, or as an independent variable able to effect change in its own right (Ogden 1987 quoting Wrigley 1981), so migration cannot be regarded as being entirely at the whim of economic and social forces. A complex interaction of population movement and economic and social forces may be the most adequate description of the relationship available at present, although it is less than helpful in explaining the nature of that relationship.

Most modern European migrations are 'economic' in character, but economic considerations do not wholly determine the level or intensity of migration. It is quite possible that economic and social conditions which would appear to be most likely to engender migration may produce less movement than in areas where the situation is not as severe, but where there is a history of migration.

In 19th century West of Scotland there was a good deal of background migration, seemingly unconnected with measurable economic advantage or disadvantage. This is quite clear when comparing Dumbarton and the Vale of Leven, where if economic conditions were the sole consideration, there would have been much less out-migration from the former than the latter. Of course, a number of other reasons for the high out-migration rates from Dumbarton were put forward, especially housing and health problems. Ultimately, though, there has to be the admission that migration breeds migration, and that while certain fluctuations may be attributable to particular events, there will be levels of movement which do not have their origins in local industrial, economic or social conditions, but in wider, long term socio-economic contexts as well as in behavioural characteristics which may or may not be related to quantifiable economic variations.

CHAPTER 13

THE ETHNIC DIMENSION

Subsequent chapters deal with the birthplaces of 'migrants'; the changing contribution of 'nearby Scots', Irish and others to the peopling of the factory villages and adjacent burgh; the occupations which they followed; the status which they enjoyed and their residential patterns through time.

This chapter deals with the wider issue of their integration into the host society and the problems of interpretation in this context.

THE IRISH: INTRODUCTION

In the history of Britain it is doubtful whether any ethnic group has excited more antagonism, drawn more comment or been so roundly blamed for society's ills as the Irish in the Victorian era.

Naturally such animosity was greatest in the areas where the Irish settled in largest numbers. Overcrowded cities like Liverpool and Manchester were the breeding grounds of discontent, but it is probable that the deepest and most enduring ire was to greet those who made the short journey across the Irish sea to Scotland.

There can be no adequate explanation for the intensity of the Scots' response, but it had its roots in the geography of Irish immigration, demographic patterns, social, cultural, religious and political differences, both real and perceived.

EARLY MIGRATION TO BRITAIN

There has been a continual ebb and flow of population between Ireland and Britain since prehistoric times. From Columba to the Elizabethan plantations and the relatively recent exchange of shipyard workers between Belfast and Clydeside, it has been an interchange which has bound Scotland and Northern Ireland together in particular.

In the pre-famine era Irish immigrants were no strangers to Scotland, but their numbers were small and their stay was, more often than not, a temporary one in that they provided a pool of harvest labour (Johns on 1967). In places like the Vale of Leven they would work not only in agriculture but in the bleachfields, returning home in the murky months when bleaching by sunlight was impossible. Those who stayed in Scotland tended to concentrate in the south-west in areas closest to their native land.

While it would be wrong to give the impression that 'permanent' migration was merely a by-product of 'the famine' it was certainly after this catastrophe that the Irish began to pour into Britain; impelled by conditions at home and drawn into an industrialising Britain by the chance of employment, by a growing web of family and community connections or by the prospect of eventually making their way to America (See O'Grada 1977).

CONTRASTS: THE IRISH IN BRITAIN AND AMERICA

In the 19th century the number of Irish in England and Wales reached its peak in 1861, when 602,000 or 3% of the total population were Irish born. In Scotland the peak was not reached until 1881 when there were 219,000 Irish, 5.9% of the population. However, proportionally they had represented 7.2% of the Scottish population in 1851 (Lawton 1959). Yet despite this substantial

influx and the comment which it produced at the time, there has been as O'Tuathaigh (1981) states, scant attention paid to the Irish in Britain. There are significant exceptions such as the work of Jackson (1963) and Lawton (1959); and recently the contributions edited by Swift and Gilley (1985) have done much to redress the balance.

The Irish in America are a different matter, but it would be wrong to draw too many parallels between these migrations as the conditions in the host communities and the attitudes of the migrants themselves, were very different. Indeed, the contrasts in written output may be a reflection of this difference. For a brief list of studies on the Irish in America see Aspinwall and McCaffrey (1985 P150 Footnote 1).

In America the Irish community was but one piece in a mosaic of ethnic groups, and although they too suffered from discrimination in cities like Boston, they were not the only ethnic minority. The attitudes of the migrants themselves were important, and the desire to integrate may have been greater for immigrants to America than to Britain. In some cases America was the ultimate goal of those landing at Britain's ports. Many who stayed felt little loyalty to the Crown. Whereas patriotism and allegiance to the red, white and blue is taken for granted of the 'Irish-Americans' as they like to call themselves. To coin a term 'the Irish-Britons' would almost seem as a contradiction in terms and would not be used even by most Protestant Ulstermen who regard themselves as unequivocably British. The cosmopolitan nature of American society and ironically, successive waves of later migrants from Southern and Eastern Europe made for a relatively rapid assimilation of the Irish. In Britain there were too many cultural religious and political differences either for the Irish to wholeheartedly embrace their adopted country, or for their hosts to quickly accept them.

ATTITUDES OF IMMIGRANT AND HOST IN 19TH CENTURY BRITAIN

In any society there will be a wide spectrum of attitudes among both natives and migrants. Private beliefs are often at variance with public postures. To illustrate the gulf at its widest, between the Irishman and his British counterpart a personification of the two extremes should prove valuable.

The Irishman was a Catholic; whether or not this meant regular church attendance, the Church baptised him, married him and would bury him; and in a foreign country it was, more than at home, part of his distinctive Irishness. He was a Nationalist, in favour of Home Rule; the Union Jack, the Royal Family and the British political hegemony were symbols of oppression. If they had not been the cause of the famine in his native land, then they had not done enough to alleviate the suffering which it had caused. He would probably never admit to himself that he was in Britain for the rest of his life and that his children would be born British. He always intended to go home or to go to America if he could get enough money. He would put up with low wages, long hours and work others saw as degrading because it was better than starving.

The Briton's attitude, in extremis, was that the Irishman pledged his allegiance to those who would seek to rebel against the elected government. His mysterious, idolatrous and dictatorial religion was merely another manifestation of his undemocratic and superstitious nature. He was a strike-breaker, someone who, with his fellow countrymen, took work away from British people. By flooding the labour market the Irish had helped to depress wage rates, they degraded the cities and created slums, they brought dreaded diseases like typhus. Many appeared to be alcoholics and petty criminals.

THE SCOTTISH DIMENSION

In Scotland the same extremes existed as in the rest of Britain. There were too, examples of co-operation and attempts at mutual understanding; it would be wrong to give the impression of continuous or constant conflict. Nonetheless, there was an under current of tension between native and migrant and it is the contention here that this was exacerbated in Scotland by a number of additional factors. The native lowland Scot was generally a Presbyterian, whose ministers had very strong theological objections to Catholicism. In short, Presbyterianism was much further removed from the Catholic faith than was the Church of England. Gallagher (1985) has suggested that Presbyterians had a more enlightened attitude to the Irish. Certainly their objections may have been more religious than political. Many in the Church of England saw a danger in the uneasy proximity of some sections of their Church to Catholicism. Some too may have perceived the threat to the Established Church as a threat to the Establishment; but to the Presbyterian the Catholic faith was an anathema, and it is difficult to sustain the argument that it was not the people but merely their religion which was detested, given the inextricable nature of Irish Catholicism.

Presbyterianism was also the religion of the Ulster Protestant, and it is his inclusion in the equation which brings a distinctive facet to Irish migration to Scotland, setting it apart from the British experience. O'Tuathaigh (1981) has identified three main emigrant routes to Britain:

a. the Northern, from Ulster and Northern Connacht to Scotland;

b. the Midland, from Connacht and most of Leinster via Dublin to Northern England and the Midlands and;

c. the Southern from South Leinster and Munster counties to London, often via Bristol.

While migration patterns do change over time, Freeman (1957) noted that in the 1951 census a big difference between Scotland and England was the birthplace of their Irish immigrants. Only half of those residing in Scotland had come from the Republic compared with three-quarters of those in England and Wales. The heaviest concentrations of Northern Irish were in the West of Scotland with Glasgow having 49% of their Irish born from the Province, Clydebank 57% and Lanark and Renfrew 60%.

T C Smout states that:

> 'The vast majority of migrants arrived from the province of Ulster, already accustomed to sectarian bitterness. There is little doubt that the Ulster Protestant immigrant, very often bearing a Scottish surname, found it easier to integrate than the Catholic, and aggressively asserted his Orange and anti-papistical sentiments as a way of allying himself to the native Scots and dissociating himself from his fellow Irishmen. The Catholic Irish were thereby driven even more firmly into a ghetto mentality, and clung to the bosom of Mother Church to find some kind of comfort and support in a totally unwelcoming environment' Smout (1986 Pp 22-23).

Undoubtedly the sectarian dimension did little to help the assimilation of the Catholic Irish, but Wood (1978) believes that the Scots themselves harboured:

> 'A layer of Scottish xenophobia which has for long co-existed with the real or imagined facts of the Irish presence in Scotland (P65).

In contrast, Gallagher (1985) has suggested that Liverpool was much more of a sectarian city than Glasgow; the evidence for this being mainly that the scale of conflict in the former was much greater than in the latter. This, in turn, was partly attributed to the greater scale of segregation in Liverpool. However, if it is not too trite an argument, it could be suggested that small-scale segregation might have led to small-scale

conflict instead of occasionally spectacular disturbances such as the ones cited by Gallagher (P112) which occurred in Liverpool and Birkenhead in 1850 as a result of the restoration of the Catholic hierarchy in England and Wales [1]. While it is gratifying for historical geographers to find that some historians believe areal segregation can have important social ramifications, it is difficult to imagine harmonious relationships of any kind existing between locals and Irish in Scotland given the attitude of the Press.

National and local examples of contemporary attitudes can be provided to illustrate the role of the Press in helping to form, or in confirming, the prejudices of, the Scots' perception of Irish immigrants. Handley's unique and masterly work, The Irish in Scotland (1964), provides numerous instances of defamatory statements made in newspapers, articles and books, see for example Pp 239-253 and P352.

Newspapers which served the Dumbarton and Vale of Leven areas were of course no different, and as was the practice at that time carried many national and international stories from a variety of other newspapers in any case. The tone of comment ran the whole gamut from affected amusement at the quaint and exotic ways of the Irish, to malicious scribblings designed to ferment dissatisfaction. When a good story could not be had about the Irish here, then the quixotic tales of courtroom proceedings in rural Ireland were trotted out. Journalists contorted the most innocuous pieces of news to provide an Irish element. Any excuse, it seems to show them up as bad, bizarre or buffoons. In Renton, for example, which had the heaviest concentrations of Irish in the Vale of Leven, they were even given as the reason for the need to number houses.

> 'These improvements are much needed as from the number of Irish now resident here who keep up correspondence with their friends across the channel, it is often no easy task for the postman to find the real Pat or Mike for whom the sometimes not very legibly addressed epistles are intended' (Lennox Herald 27 August 1864).

The Irish, by virtue of their nationality, religion, occupational and social status formed a very distinctive group in British towns and cities of the 19th century. Their separateness manifested itself areally in the formation of ghettos in some English cities; but two elements muddy the water in any investigation of their locational traits in Scotland; those being the Protestant, Catholic division among the Irish and the Scottish housing situation.

THE PROTESTANT/CATHOLIC DIVIDE: PROBLEMS OF INTERPRETATION

As the cebs usually give only the nationality of non-Scots (Scots had to provide their county and parish of birth) it is impossible to determine the birthplace within Ireland of the vast majority of immigrants, although some enumerators did record their counties of birth too. Therefore one of the facts which would have provided a reasonable clue as to a person's religious affiliation is missing. Names cannot be used with enough certainty to assign individuals with confidence to one camp or another. True, most Irish/Catholic/Nationalists had names which were instantly recognizable as such, for example Sweeney, O'Donnell and Devlin; and most Ulster/Protestant/Unionists had names which pointed to their British, particularly their Scottish origins, such as Thompson, McPherson and Robertson; but they are not nearly reliable enough to base cogent arguments upon. What would be made of the names Terence O'Neil and Robert Sands, two famous names from the recent history of Ulster, but names which would tend to cause error if they belonged to two ordinary 19th century Irishmen who were to be assigned to either the 'Native Irish' or 'Scots Irish' categories on the basis of name alone.

This makes statements about social areas more difficult to pronounce with confidence. For example, three areas may have a proportion of two-thirds Irish to one-third Scots. Area A has a ratio of 1:1:1 Catholic Irish, Protestant Ulsterman, Native born Scots; Area B has a ratio of 2:1 Catholic Irish to Native born Scots; Area C has a ratio of 2:1 Protestant Ulsterman to Native born Scots. Clearly these three are very different; and what of the Native born Scots? How many of these are of Irish or Ulster origin? In most cases the cebs would yield no information which would allow such distinctions to be made Other, often secondary, sources are necessary if sense is to be made of the location of Irish people in Scots settlements.

THE HOUSING SITUATION: PROBLEMS OF SPATIAL ANALYSIS

As discussed in Chapter 3, a simple two dimensional spatial analysis of the type facilitated by terraced housing in England, will not work for most Scottish towns and cities, due to the density and type of housing. Segregation, where it existed, was on a very small scale. Both quantitative and qualitative evidence points to the existence of Irish 'closes' and certain streets or parts of streets may have had a greater concentration of these closes than others. College Street in Dumbarton was one such street, but it was by no means an exclusively Irish street. Not only were there no overwhelmingly Irish districts in Dumbarton, which is probably to be expected of such a modest sized town, but there were no exclusively Irish streets either. If there was segregation it was at 'close' level. This does not invalidate the broad spatial analysis which may pick up significant concentrations of Irish, but caution must be exercised when interpreting the results.

STUDIES OF THE IRISH IN SCOTLAND

As cited earlier, Handley (1964) has ensured that the Irish in Scotland have not been ignored, but detailed case histories are harder to find. Aspinwall and McCaffrey (1985) have undertaken a 'comparative study' of the Irish in Edinburgh with the emphasis on political, social and religious structure. More comparable to the present work are the writings of Collins (1981) and Lobban (1971).

The former contrasted employment opportunities, migrant types, assimilation and links between the towns of Dundee and Paisley and Ireland. Importantly she has observed that the Irish in Dundee were not undertaking so much a process of integration into the existing 'economic and social structures' but were in fact helping to mould the character of those structures and of the emerging industrial town itself (P212). While Lobban's general review of the Irish in Greenock examined their employment opportunities, their residential locations and their marriage patterns and compared them with other groups in the community.

These cases apart, there are no comprehensive writings on the Irish experience in other Scots towns and virtually nothing on their experience in smaller settlements. However with Handley's book providing a national backdrop, the observations of Collins and Lobban provide useful comparisons with the following findings on the Irish element in Dumbarton and the Vale of Leven.

THE 'NEARBY SCOTS' AND 'LOCALS'

'THE NEARBY SCOTS'

The phrase 'Nearby Scots' is used to describe those short distance migrants who came from the contiguous counties of Stirling, Renfrew, Argyll and Lanark, and those from Ayrshire and Dunbartonshire

outwith the local parishes of Dumbarton, Bonhill and Cardross. They had much more in common with the locals, or those who saw themselves as locals, than the Irish. There can be little doubt that assimilation was more easily achieved for a number of reasons. As a consequence such movements throughout Scotland, while described in terms of net gains and losses of population through time, have provoked little in depth study (see however Campbell 1984). It is axiomatic that the very features which made the Irish immigration so distinctive, which hindered integration, led to social tensions and influenced the location of the Irish, and which made it so necessary to consider them as apart from the receiving society, were missing from the 'Nearby Scots' migrants.

These short-distance migrants merged easily into their adopted societies. They shared a common religion, language and nationality; but it would be wrong to treat them as a homogenous mass. While their birthplaces were not far from Dumbarton or the Vale of Leven, they were employed in a wide spectrum of occupations and covered a broad range of social classes, more so than the Irish who were over-represented in certain occupations and in the lower social strata. The 'nearby Scots' came from many different environments; from industrial towns of Lanarkshire, rich agricultural areas of Ayrshire, mill villages of Renfrewshire and rugged coastlands of Argyll. There is evidence that many left their place of birth to find work similar to the type they had pursued at home. Many were footloose, the birthplaces of their children a catalogue of towns in the West of Scotland.

Probably the most distinct sub-group would be those from Argyll who were part of the Highland migration southwards to the industrial belt. They may have been set apart from the lowland Scots by their language, although by the second half of the 19th century there is little evidence of a large number of persons able to speak only Gaelic. Most people who intimated to the census enumerator that they could speak Gaelic also spoke English, indicated by a 'G and E' abbreviation to the right

hand side of the person's entry in the ceb. Nonetheless, to simply regard the Argyllshire migrants in the same way as those from the Central Belt would be to miss important cultural, social and economic differences. It is useful to examine their locational patterns in comparison with other nearby migrants to discover whether their Highland distinctiveness had any areal expression.

Therefore, while referring to the 'nearby Scots' as defined above, and in comparing them to other groups, it is necessary to bear in mind and to investigate variations within that broad category.

'THE LOCALS'

This phrase is used to describe those born in the parishes of Dumbarton, Bonhill and Cardross. It would have been preferable to distinguish between those born in the Vale of Leven and those born in Dumbarton to investigate short-distance movements of population, but the imprecise and inconsistent recording at that scale, and the peculiar nature of parish boundaries and settlement growth, makes this impossible. To illustrate these difficulties an examination of parish boundaries in Dunbartonshire and the cebs reveal that Cardross contained both the village of Renton and the portion of Dumbarton Burgh on the west bank of the Leven. Some enumerators indicated Dumbarton/Cardross (Renton) or Dumbarton/Cardross (Dumbarton Burgh) but this was by no means universal. Therefore the designation Dumbarton/Cardross could indicate birth in Renton, Dumbarton Burgh, Cardross village or the landward districts of this parish. To further complicate matters, a newly developed part of Dumbarton, Burnside to the east of Knoxland was for a time included in Bonhill. This can only have been an administrative convenience as the area was not contiguous to Bonhill Parish.

The term 'local' in any case must be used with caution as many designated locals were children of in-migrants. Indeed with a 'bottom heavy' population pyramid which typified many 19th century Scottish towns, a large number of the 'locals' were in fact children. Many adults would be first generation locals, and so while their occupations, social status and residential locations may be used as a bench-mark for comparing with incoming groups, it is important to acknowledge the internal heterogeneity of this category.

NOTES

1. It may be an indication of feeling north of the border that the Catholic hierarchy was not restored here until 1878.

CHAPTER 14: ETHNIC AND COUNTY CONTRIBUTIONS TO THE PEOPLING OF THE VALE OF LEVEN AND DUMBARTON

INTRODUCTION

In Chapters 11 and 12 migration patterns were considered and contrasts were drawn between those who were 'local' born and those who were 'non-local' in origin. It was impossible to delimit accurately the migration patterns of those in the middle life cycle stages from individual counties as these usually represented only a small fraction of the sample, and calculations would not only have been subject to sample error but to inaccuracies compounded by the deduction of expected death rates. However, it is possible to be particularly accurate about the overall proportions of people with the same county of birth at each census. If each sample is regarded as a simple one of c 2,500 individuals then the following standard errors (at the 95% confidence level) would apply to total sample percentages:

10%	±	0.7
20%	±	1.25
30%	±	1.64
40%	±	1.88
50%	±	1.96

(Percentages lower than 10% require special tables to calculate error).

As it is not intended to constantly repeat the confidence limits of each percentage throughout the chapter, the table above provides easy reference, as well as a testament to the veracity of the sample.

VALE OF LEVEN

As figure 14:1 shows, what is most remarkable about the results is the constancy in the percentage of the population from Ireland, the nearby counties and those born locally, as well as from the individual counties with the 'nearby' group. The Irish making up never less than 9%, and never more than 13% of the population; the 'nearby Scots' never less than 29.9% and never more than 32.9%, and the locals accounting for between 50.6% and 55.6% of the sample population at each census. Even in the ranking of individual counties there were few marked changes in order, this in spite of the high turnover in population described in Chapter 11.

Commonplace as arrivals and departures were, they were not the results of great surges of people nor of a mass exodus by those from any one area; suggesting a constant and unspectacular filtering of population over the inter-censal period leading to few marked variations in the proportions contributed by individual counties.

Figure 14:1 not only shows the percentages of the population from each county or group of counties (plus the 'locals' and Irish) in the sample, but a rank order of birthplaces. While accepting that this order could be subject to overlap even within the narrow confidence limits applied here, the ranking was extremely consistent. Even when the sexes were individually ranked there were few anomalies, comparing male to female rank order. Where this did occur it was further down the ranking where the number of people involved was extremely low and the sample was subject to greater proportional error. The differential migration favouring females did not, therefore, appear to be the result of heavy in-movements from a particular county or group of counties, although in producing separate percentages for the male and female populations the differences are disguised somewhat as the female base population was always larger.

Figure 14:1 - Place of Birth: Inhabitants of the Vale of Leven

1861-1891

	1861				1871				1881				1891			
	M	F	A	R	M	F	A	R	M	F	A	R	M	F	A	R
LOCAL	51	51.4	50.6	-	53.9	51.4	52.6	-	53	48.1	50.4	-	58.4	53.3	55.6	-
IRELAND	9.1	11.5	10.2	1	9.1	9.5	9.3	1	12.2	14.5	13.4	1	7.7	10.1	9	2
RENFREW	5.6	4.6	5	5	5.2	5.5	5.3	4	4	4.6	4.2	4	3.9	5	4.5	4
ARGYLL	5.6	6.8	6.2	3	3.1	3.3	3.2	6	2.6	3.5	3.1	6	1.8	1.9	1.8	7
AYR	1.5	1.8	1.7	7	2.2	2.7	2.5	7	2.5	3.2	2.9	7	1.8	2.4	2.1	6
REST OF DUMBARTON	4.4	4.5	4.5	6	3.9	5.1	4.5	5	3	3.8	3.5	5	3.3	2.8	3.0	5
STIRLING	6.2	5.7	5.9	4	6.1	7.7	6.9	3	6.3	6	6.1	3	9.3	8.7	8.9	3
LANARK	9.6	9.7	9.6	2	9.1	7.6	8.2	2	10.3	9.9	10.1	2	8.3	11	9.8	1
LOTHIAN	1.2	0.5	0.9	11	0.5	0.9	0.7	11	1	1.7	1.4	9	1.2	0.6	0.5	11
FORFAR/PERTH	2	1	1.5	9	2.1	2.2	2.1	8	2	1.9	1.9	8	1.9	1.2	1.5	8
NORTH	1.1	1.2	1.2	10	2.1	1.7	1.9	9	0.6	0.8	0.7	11	0.9	1.0	0.9	9
NORTH-EAST	-	-	-	14	0.5	0.1	0.3	13	0.3	0.3	0.3	12	0.2	0.3	0.2	14
SOUTH	0.4	0.3	0.3	12	0.7	0.8	0.7	11	0.2	0.2	0.2	14	0.4	0.4	0.4	12
ENGLAND & WALES	2	1.3	1.7	7	1.4	1.4	1.4	10	1.5	0.8	1.2	10	0.9	0.8	0.8	10
OTHER	0.2	0.5	0.3	13	0.1	0.5	0.3	13	0.3	0.2	0.3	12	0.3	0.2	0.3	13

KEY TO FIGURES 14:1 AND 14:2

M = Males; A = All;

F = Females; R = Rank;

Figures for Males & Females are expressed in terms of the percentages for each sex respectively. For definition of 'North', 'North East' etc see Appendices.

The biggest gap between the sexes occurred among the Irish born population, where for 1861, 1881 and 1891 there was at least 2% of a difference favouring females, with respect to their relative proportions in either sexes total population. Bremner (1869) noted the large number of Irish females employed at the Dalquhurn and Cordale works in Renton, and one boarding house, outwith the sample, contained twenty-five 'single' Irish women. All indicative of migration by young, single, Irish women well aware of the opportunities open to them in the Vale of Leven. In 1871 the gap was much narrower, and given the difficulties encountered in the previous decade there had been considerable out-migration by Irish women probably combined with a greater reluctance on the part of Irish women to flock to the Vale in great numbers.

The Irish population trends tend to mirror, if not exaggerate, the overall pattern with a decline in migration over the 1861 to 1871 decade, resurgence in the 1871 to 1881 period and indications of further decline in the 1881 to 1891 decade. The net in-migration of Irish in the middle decade was heavy, bringing their overall share in the population up by 4% at a time when the population rose by c 4,000, that is an estimated growth in the Irish population from c 1,050 to c 3,000. This underlines that like Lobban's (1969) findings for Greenock, Irish immigration to the Vale of Leven was maintained at a higher percentage level than for the country as a whole when, after mid-nineteenth century influxes, their proportional contribution to the Scots' population went into decline, although numerically they did not reach their peak until 1881. However, this apparent in-migration may have been partly the result of internal re-organisation within West Central Scotland, but it does appear too as if there was a further surge in emigration from Ireland. While their contribution was maintained at a higher level than for the country as a whole, it declined rapidly after 1881, so that by the next census year there were fewer Irish born in the Vale than of those born in Lanarkshire. Among males in 1891, they lagged further behind, trailing both Lanarkshire and Stirlingshire. As the population overall was

increasingly 'home grown' the decline in the Irish population was sharper that that for the 'nearby Scots' because Irish immigration per se was in definite recession by 1891. Additionally the Irish population in the 1881 to 1891 decade was more volatile than that of the 'nearby Scots' after their sizeable net influx in the preceding decade, which is apt to produce a strong counter flow when circumstances change.

As a group, the 'nearby Scots' maintained a steady proportion of the Vale's population throughout the thirty years under study (see figure 14:1). At first reading the decline-resurgence-decline pattern does not appear to apply to this group, but this steady c 30% to 32% of the population must be viewed against the overall population trends which showed a slow growth in the 1861 to 1871 decade, with increased growth in the 1871 to 1881 decade and a slackening in the 1881 to 1891 period. So by its very consistency it was indeed following the overall trends in population, but not in the exaggerated fasion which may have been expected given that this population was not local and thus very susceptible to migratory influences, always bearing in mind that the figures here do not show inflows and outflows but a net balance 'snapshot' frozen in time. What figure 14:1 reveals is that a balance was maintained which paralleled and partly dictated the overall population trends.

Within this broad grouping which exhibited such consistency there were important internal variations over the period. Most noticeably the decline in the Argyll born population which accounted for c 6.2% of the population in 1861 and was third ranked only behind Ireland and Lanarkshire, to its position in 1891 when it contributed c 1.8% of the population and was ranked seventh behind all the other 'nearby' counties. Sure proof of the decline in the Highland drift to the industrialised West of Scotland.

The decline in the proportion of Argyll born was fairly rapid over the 1861 to 1871 period with a estimated drop of c 3% overall. That is by 1871, this county was contributing about half as much to the overall population as it had in 1861, with around three

hundred fewer Argyll born people in the Valley at the later date. The decline, perhaps the result of 'step-wise' migration as the Argyll population may have been very much in-transit between the Highlands and the industrial heartland, a step made more temporary for this ageing population by the uncertain future which the cotton processing industries faced at the time of the American Civil War.

Seemingly in direct contradiction, Stirling and Clackmananshire's contribution rose from c 5.9% in 1861 to c 8.9% in 1891, but again this may have been partially due to an overall southward drift in the population towards the industrial belt. It would be unfair to give the impression that the Vale's location, filtering a transitory population from Argyll and West Stirlingshire southwards down the flanks of Loch Lomond and into the Leven Valley corridor and from there to the industrial heartland, was its only attractive feature. Indeed there had been a tradition of movement to the Vale from Argyll parishes and especially from the West Stirlingshire parishes of Drymen and Buchanan which were close by. Many of these people were already printworkers. In addition, as the small, rural bleachfields became increasingly anachronistic, there was an inevitable drift towards larger centres where that industry prospered, and the Vale was pre-eminent among those in the West of Scotland.

Renfrew, the fourth ranked county in three of the census years (like Stirlingshire, third in the latter three census years) was displaced only in 1861 by the prominence of the Argyll born population. Definite employment links between the Vale and textile towns like Paisley did result in a considerable exchange of population. However this involved a small percentage, and with c 4% to 5% registering as Renfrew born at any census here, the case for very strong ties between the Vale and the Renfrewshire textile centres is hardly proven, given the mobility of labour at that time.

The rest of the county of Dunbartonshire (outwith Dumbarton, Cardross and Bonhill) also followed the Renfrew and Stirling pattern being fifth ranked at the latter three censuses, but sixth in 1861. Contributions here were small and slowly decaying. People from these predominantly rural parishes might have been expected to account for a bigger proportion of the population in an industrial centre like the Vale of Leven; but there were several reasons why this was not the case. Firstly, much of the internal re-organisation, in the form of movement from rural, upland parishes had already passed, and the Vale had benefitted considerably from such moves in the 18th and early 19th century when agricultural reform and industrial growth were, in harness, inducing this movement. Secondly, Dumbarton was a small county both physically and in its population; proportionally it could not contribute a great deal to the peopling of industrial centres, although its population was mobile even by the standards of the day (Campbell 1984). Thirdly, by this time, population movement within the 'shire and to contiguous counties would have been towards other closer, and possibly more successful, enterprizes than those in the Vale. The growth of Clydebank, the mining and metal industries around East Dunbartonshire and the whole Clydeside industrial complex served to syphon off an extremely migratory population.

In many ways the case of the Glasgow and Lanarkshire population's contribution can also be explained by the size of the population; not small this time like that of Dunbartonshire, but large and mobile, many of these undoubtedly children of people who had no long term attachment to their county of birth. Just as every sizeable migration has its counter-current, so the centripetal forces which drew people towards the Glasgow and Lanarkshire heartland had their counterbalance in the centrifugal forces which propelled people out from the core towards the industrial periphery and certainly Glasgow's bad reputation for overcrowding and disease were brakes on its over-vaulting growth which must have persuaded many of those who could, to move elsewhere. Like the Irish, the Lanarkshire born population totals seemed to follow

the decline-resurgence-decline pattern. The 'final' decline was not as rapid as that of the Irish which was part of a larger decline in immigration, resulting in the Lanarkshire born population becoming the largest 'non-local' grouping by 1891.

The proportion of those locally born fluctuated in accordance with the previously identified economic trends. However the 'correlation' was an inverse one where they contributed less to the total population at the census points identified as being in more prosperous times (1861, 1881) than they did in those which occurred in less secure economic climates (1871, 1891). This was of course due to the overall resurgence in net out-migration. As far as the population percentages show, those born 'nearby' contributed most in 1861, but they failed to contribute proportionally more in 1881 than either 1871 or 1891 due mainly to the significant net in-migration of particularly female, Irish which occurred in the 1871 to 1881 decade. There were approximately 1,029 more Irish (385 males and 644 females) in 1881 than were in the Vale ten years earlier.

The proportion of locals remained predominantly young, suggesting that many were children of migrants, but also that many 'local' born people had gone elsewhere, without spending their adult life in the Vale. For example, c 57% of the 'local' male population were under 15 years old in 1861 and the proportion was much the same thirty years later. Around 81% of the 'local' born males in 1861 were under 30 years old, that is approximately 2,135 people were in this category. By 1891 the number of 'local' born males over thirty was c 944 or 18.2% of all 'local' born males. Therefore over thirty years, through death and migration c 1,190 males were lost from this group. Even accounting for high 'infant' mortality rates, this represents a significant net out-migration.

Returning to the migration patterns, which were discussed in terms of 'local' and 'non-local' (or 'natives' and 'non-natives') In Chapter 11. By further examining the 'non-local' stream, breaking it down into 'nearby Scots' and 'Irish', analysis can go beyond

mere proportions. In both categories there were fewer males in the 15 to 54 age group in 1871 than in 1861, the greater out-migration appearing to have been among the 'nearby Scots'. Over the next decade both groups doubled their representation in this sector but their 1871 bases were very different, with the 'nearby Scots' group having over 600 men in it, but the Irish probably having less than 300. Surprisingly, in the 1881 to 1891 decade there was a net in-migration of 'nearby Scots' whereas the Irish population showed a net decline of two in seven over this period.

Overall, Irish females in the earliest decade studied here showed very little enthusiasm for migration to the Vale of Leven and their numbers in the 15 to 54 group in 1871 narrowly failed to match their 1861 total. Whereas the numbers in the 'nearby' group of this age probably rose by around 200. There was a resurgence of Irish immigration in the next decade and the number of 'nearby Scots' arriving also showed increased vigour. As with the male population the Irish totals declined in the 1881 to 1891 decade while the numbers of 'nearby Scots' continued to climb. The decline in the Irish population, male and female, may have been in part due to the industrial situation in the Vale, but if so, the response was exaggerated by the overall national reduction in Irish immigration resulting in an increasingly ageing population becoming more susceptible to higher mortality rates.

DUMBARTON

In common with the Vale of Leven, there was, despite a heavy turnover in population no great variation in the contribution made by the 'nearby Scots' to the total population; always between c 23.4% and 26.8% while the 'local' and Irish populations varied in their proportions through time only slightly more than in the Vale. Within the 'nearby Scots' category again there were no violent fluctuations in the proportions from individual counties, nor were there significant differences across the sexes in the

contributions made by individual counties. The rank order was more variable than for the Vale as figure 14:2 shows, but there is a danger in making too much of this comparison, for it is not comparing like with like. Dumbarton's 'nearby Scots' never made up more than c 26.8% of the total population while in the Vale they were never represented by less than c 29.9% of the population. So in the former through time, even small fluctuations in the actual numbers from a county could lead to sizeable variations in the rank order.

The most outstanding feature of the birthplaces of Dumbarton's population in this period is the contribution made by the Irish who accounted for about one in five of the population in 1861 and 1881. In line with national trends in this period they were at their greatest proportional strength at the earlier date and at their greatest numerical strength at the latter. The national figures were 6.6% (204,000) in 1861 and 5.9% (219,000) in 1881. Lobban (1971) has shown that the latter year marked both the numerical and proportional zenith for the Greenock Irish.

The total numbers of Irish in the population of Dumbarton was between 1,740 and 1,873 in 1861 but 2,616 to 2,846 in 1881. The figure in 1891 was despite continued population growth, about the same as in 1881 and consequently the percentage of Irish in the population decreased to c 15.3. In this period Irish population growth was greatest in the middle decade, 1871 to 1881, but this disguises the significant differential net migration which occurred, in favour of males. By taking the sample estimates as being almost exact and, unlike above, not providing upper and lower limits (at the 95% confidence level) the following totals emerge.

Figure 14:2 - Place of Birth: Inhabitants of Dumbarton 1861-1891

	1861				1871				1881				1891			
	M	F	A	R	M	F	A	R	M	F	A	R	M	F	A	R
LOCAL	39.9	44.4	42.3	-	44.1	46	45	-	45.7	49.2	47.3	-	46.3	50.7	48.5	-
IRELAND	23.4	19.2	21.4	1	18.8	15.7	17.3	1	22.5	14.9	19	1	17.5	13.1	15.3	1
RENFREW	7.3	6.5	6.9	3	4.4	5.4	4.8	3	3.8	5	4.3	3	4.4	4.5	4.5	3
ARGYLL	2.7	3	2.8	5	3.2	2.9	3	5	1.9	2.3	2.1	7	2.3	2.6	2.5	6
AYR	2.5	2.3	2.4	6	3.8	3.1	3.4	4	2.7	3.4	3	5	2.7	3	2.8	5
REST OF DUMBARTON	3.4	3.7	3.5	4	2.4	2.8	2.6	6	1.8	2.3	2	8	2.2	2.1	2.1	9
STIRLING	2	2.5	2.2	7	1.7	3.2	2.4	7	3.4	3.6	3.4	4	3.4	3.6	3.5	4
LANARK	8.6	9.5	9	2	9.7	10.5	10	2	7.2	10.3	8.6	2	10.3	11.2	10.8	2
LOTHIAN	1.2	1.4	1.3	11	2.1	2.4	2.3	8	1.5	1.9	1.6	10	1.9	1	1.5	10
FORFAR/PERTH	2.1	2.1	2.1	8	2.3	1.8	2	9	3	1.8	2.5	6	3.1	1.7	2.4	7
NORTH	1.5	1.1	1.3	11	1.6	1.5	1.5	11	1.9	1.4	1.6	10	0.8	1.4	1.1	12
NORTH-EAST	1.1	1	1.1	13	2.3	1.8	2	9	0.8	0.7	0.8	13	1.1	0.7	0.9	13
SOUTH	1.7	1.7	1.7	9	1.4	1.5	1.4	12	1.3	0.8	1.1	12	1.3	1.2	1.3	11
ENGLAND & WALES	1.9	1.6	1.7	9	1.3	1.5	1.4	12	2.1	1.7	1.9	9	2.1	2.7	2.4	7
OTHER	0.3	0.1	0.2	14	0.2	0.2	0.2	14	0.4	0.7	0.6	14	0.4	0.4	0.4	14

For Key see Figure 14:1

Figure 14:3 - Approximate numbers of Irish in Dumbarton 1861 to 1891

YEAR	MALE	FEMALE	TOTAL
1861	1046	762	1801
1871	1145	855	2000
1881	1730	1000	2730
1891	1590	1140	2730

In spite of having a higher base population in 1871 the male Irish presence grew by over 50% in the following decade whereas there were approximately 17% more Irish females in 1881 than in 1871. By the 1881 to 1891 the trend had reversed, many of the young single men had doubtless gone elsewhere, certainly North America and Australia, were favourite destinations from the West of Scotland. As the Irish population aged, those males being lost through death and out-migration were not being replaced, whereas the number of Irish females continued its slow growth. These observations re-affirm a point made in Chapter 11, that a recordable surge of in-migration was often succeeded by a strong counter-surge.

The upturn in Irish migration in the 1871 to 1881 decade runs counter to the overall trend identified in Chapter 11, which showed this decade to be the only one where, following 1871's 15 to 44 year olds through to the 1881 census, Dumbarton recorded a small net loss among the migrants in this group and, where overall in the 15 to 54 group there were only around 150 more male migrants in 1881 than in 1871. Conversely the marked increase in male migrant numbèrs in the mobile age cohorts over the 1881 to 1891 decade was due to a net in-migration of 'nearby Scots' not the Irish whose numbers had declined within this group over the decade.

Whether or not these patterns had any social significance is a matter of speculation. Was this mere coincidence, driven more by the conditions which the prospective migrants, both Irish and 'nearby Scots' found themselves in? Or did the conditions in the reception area (Dumbarton) assume greater significance. If there is any truth in the latter, then the reasons could be laid at the door of prejudice and in preferential hiring of labour. Lobban (1971) has already demonstrated for Greenock, the tendency among Irish, Catholic and Protestant, and among Highlanders to congregate in specific industries or professions. On the other hand the Scots being better represented in the higher echelons of the labour pool would have found more skilled work available in 1891 than in 1881, and with a definite improvement in housing conditions would have been encouraged to come in greater numbers. This explanation is more economic than ethnic, but the reasons why the Irish were less well represented in such groups is of course another matter.

Ultimately the propelling force was an economic one, and the slow growth of both 'Irish' and 'nearby Scots' female groups, at variance with the male fluctuations, tends to underline this.

In the introductory paragraph to this section comment was made upon the similarity in contributions made by the nearby counties across the sexes. That is, there were no vast differences in the contributions made by Stirling, for example, to the respective male and female population in Dumbarton (males 2.0%; females 2.5% in 1861). Now, while it would be unenlightening to compare male and female contributions from each county in this way (sample error, however small, rendering differences in such minute proportions meaningless) taken overall the 'nearby Scots' exhibited a surprising characteristic for such an area of heavy industry. It is virtually certain that, in spite of the overall differential migration in favour of males, females from the 'nearby Scots' category outnumbered their male counterparts in this category at all censuses. This differential migration in favour of males can be shown to be mainly the result of Irish in-migration, for

the sample shows Irish males to be present in significantly higher numbers than their female counterparts. Other Scots outwith the 'nearby' category along with those born outside Scotland also in total contributed more males than females. The gap being most emphatic among the Forfar/Perth born population at the latter two censuses probably as a consequence of the selective migration of Forfarshire shipyard workers.

Given that there were few employment opportunities for females it does suggest that, in the absence of other motives, female migration was more part of a family migration, whereas perhaps due to the distance and greater obstacles involved, Irish in-migration had a stronger young, single male element; most evident at times of greatest in-migration such as in the 1871 to 1881 period.

The largest county contribution to the peopling of Dumbarton was from Lanarkshire. And, in common with the Vale of Leven there were no immediate economic reasons why this should be so, other than certain similarities in industrial structures. Demographic, locational and behavioural factors being more important, there being a very large reservoir of population which was close by and very much a part of the migrational melee which becomes apparent on taking a long term view of the region's history. As figure 14:2 shows, in the sample the County of Lanarkshire, including Glasgow always accounted for between 8.6% and 10.8% of the population. The lowest percentage occurring in 1881 when the 'nearby' counties as a whole contributed least to Dumbarton's population, the result of out-migration in the previous decade; the highest proportion occurring in 1891 when migration from the 'nearby' counties in the intervening period had been pursued with renewed vitality.

The fourth ranked location (third ranked county) at the 1861 census was the 'Rest of Dunbartonshire', but the fact that a dramatic slump in its rank over the period was identified, clearly illustrates the danger of placing too much credence on the rank

order of those places comprising the smaller contributors, especially in Dumbarton where the total 'nearby' born population was about a quarter of the whole. For the difference shown in the samples was only of the order of 1.4% (3.5% in 1861 and 2.1% in 1891). Beyond Ireland and the County of Lanarkshire, the contributions from other individual counties were very small and to attempt any meaningful analysis of such small individual changes would be fatuous.

A COMPARISON OF BIRTHPLACES: VALE OF LEVEN AND DUMBARTON

For settlements so close physically there were some distinct differences in the birthplaces of the inhabitants. Even the proportion of local born people to be found in either areas was different. There were, as figures 14:1 and 14:2 indicate, proportionally fewer 'local' born people living in Dumbarton; the effects of in-migration on the burgh being more immediate and more vigorous during this period. Whereas the proportion of those born 'locally' did swell slowly from c 43.3. to c 48.5. as the burgh became more dependent on its own indigenously bred population, the, albeit higher, percentage of 'locals' living in the Vale fluctuated more in tune with economic patterns, where a small proportion of migrants, and therefore a higher proportion of locals, were to be found there in more difficult times. Of course it could be argued that the differences were, per se, the result of economic differences. Observable cycles of population behaviour in the Vale being due to very definite variations in the industrial prosperity of these settlements, founded as they were on an extremely narrow industrial base. Dumbarton's industries at the same time were displaying qualities of strength and expansion, suffering few real set backs. This could have greatly influenced the population patterns shown in figure 12:1 where both 'local' and 'migrant' numbers climbed steeply, but with the proportion of locals just gaining fractionally over the period.

Differences in the industrial structures of either area make it difficult to state with confidence that the migration pattern in the Vale was in a more mature state than that of Dumbarton. Was it more in tune with the economic realities because a long history of migration had reached its climax phase? Or were the economic realities so stark that they had such profound effects on the migratory behaviour of the population?

Whatever the case, it must be reiterated that neither local population was completely sedentary, and like the 'non-locals', was very likely to contemplate migration. If it is considered that 57% of the Vale's local born male population was under 15 in 1891 and the equivalent figure for Dumbarton was 59% it dispels the notion of a static and ageing local population.

The major divergence in recorded birthplaces of migrants was in the proportions of Irish born resident in either area. The sample showing that the Irish living in Dumbarton made up a significantly larger sector of the population that in the Vale. In 1861, the gap may have been more than 10% when over 21% of Dumbarton's population, but around 10% of the Vale's, were originally from Ireland.

What reasons could there have been for such a fundamental difference in the population structures of settlements only a few miles apart? Many possibilities could be advanced; from the different employment prospects and prejudice among printwork managers and foremen, to migrational inertia fostered by contracts in either area. Job opportunities may well have been an important factor in filtering a greater proportion of the Irish migrant stream to Dumbarton. Firstly, there were jobs in shipbuilding and heavy engineering, ideally suited to skilled tradesmen from Belfast. Collins (1981) has already demonstrated that, for Paisley and Dundee, known job opportunities influenced both the size of the migrant stream and the places of origin within Ireland, of that

stream. Secondly, even unskilled workers would have found jobs with more ease at this stage, in Dumbarton than in the Vale of Leven. Crucially, opportunities for male workers were more plentiful than for females in Dumbarton and while the opposite was true in the Vale of Leven the differential was not as great. Combining this with the fact that Irish males were traditionally more likely to migrate than their female counterparts, particularly in the early stages of any migrational current.

The attraction which Dumbarton held was of recent origin and would have the effect of re-inforcing this. A point which requires further emphasis, for as was demonstrated in Chapter 11, in the mobile age groups, 'migrants' to 'local' ratios were far less even in Dumbarton. The biggest divergence being among adult males in 1861 when there were c 4.5 'migrant' males for each 'local' one. The timing of Dumbarton's large scale in-migrations may have been crucial. They were essentially a phenomenon of the second half of the 19th century when Dumbarton was becoming an attractive destination, just at a time when the Irish were emigrating in ever increasing numbers.

In contrast, the Vale's long established industry did attract Irish migrants, but it was less enticing because male jobs were less readily available, and proportionally 'locals' persisted at higher levels. Those immigrants coming straight from Ireland, without firm contacts in the Vale, would have had to pass through Dumbarton on their journey. In this case jobs in the burgh would represent an 'intervening opportunity' of the type identified in classical migration theory.

Many migrants did have contacts in these settlements and migrated on their strength. The phenomenon of lodging with friends and relatives is investigated in a subsequent chapter. Once such contacts are established, when employment opportunities are perceived, then the movement gathers a momentum of its own. Women and children follow, families migrate and the web of contacts becomes wider and yet more intense, exaggerating locational

differences in the host county, some places being more receptive to immigrants, others being less so. This is not to pretend that a pattern takes shape merely due to economic forces and contacts among immigrants. In Chapter 13 much of the prejudice directed at the Irish, and which had been directed to a lesser degree towards the Highlanders too, is described. Just as this tension, along with economic constraints and the wishes of migrants to congregate together, had led to ethnic concentrations in specific locations within most towns, so there were places which resisted immigration more strongly than others.

However, under a system of industrial capitalism almost honed to perfection in favour of employers, labour shortages could erode those barriers. Resistance being more in evidence when work was scarce. Certainly there was extreme prejudice against the Irish, justified by the notion that they were undercutting wages and taking work out of the hands of the indigenous population. Initially the Irish may have been used as 'strike breakers' and in their dire circumstances were prepared to work long hours for little reward, but this received wisdom is based as much on rumour, perfunctory perceptions and downright prejudice, as on fact. There can be less doubt however, about the active role which they and their descendants subsequently played in the labour movement in Scotland (Wood 1978).

Employers in this area certainly capitalised on Irish labour, both in the shipyards and machine shops of Dumbarton and the printworks and bleachfields of the Vale of Leven. The status enjoyed by these workers, the areas of employment in which they were concentrated and the contrasts in these respects with their Scottish fellow workers are investigated in subsequent chapters, as is the extent to which either group was concentrated in specific sectors of these settlements.

While the proportion of Irish in the Vale approximated to the county average and they were over represented in this respect in Dumbarton, there were distinct similarities in the timing of net

movements to either location. Earlier in this chapter the behaviour of the Irish migrant stream was compared to migrational patterns per se, for both locations and over this period. It was noted that the Irish did not wholly conform to the overall trends, although being such a large minority, especially in Dumbarton, they were in a position to greatly influence them. Most noticeable was a common surge in Irish immigration in the 1871 to 1881 decade, obvious even in figures 14:1 and 14:2 which merely record percentages and not the number of people present. It must be borne in mind that the Vale's population grew by about 4,100 and Dumbarton's by c 2,800 in that decade. The Irish movement to the Vale was in line with the overall trend of renewed in-movement, but Dumbarton's significantly increased Irish intake ran counter to the burgh pattern which indicates that in this decade in-migration ebbed and out-migration became more prevalent, see figure 14:3.

This Irish surge was definitely employment related for it was particularly males who migrated to Dumbarton, and while the gap was narrower for the Vale, it was the female stream which dominated there. But the fact that this movement occurred towards places with very different opportunities, shows that conditions in the donor country were an important factor in powering the move. Indeed this influx, replicated nationally with a net total of 11,000 more Irish in Scotland in 1881 than in 1871, allowed them to reach their numeric peak at the later date, twenty years after they had reached their 19th century peak in England. This demographic fact has been greatly overshadowed because the greatest percentage of Irish in Scotland was 7.2% (in 1851) occurring after a momentous net influx of some 81,000 people in the decade immediately prior to that date. Because the Irish were selective in their destinations by 1881 and due, without doubt to some internal movement of the Irish population within West Central Scotland, this decade was one which saw the final incursion of Irish into the study area in the 19th century.

In the contribution made by the 'nearby Scots' to the peopling of either location, the greatest similarities occurred in the Lanarkshire born totals; accounting for between 8% and 10% of their populations at each census. In this respect, the Lanarkshire born made up about one-third of the 'nearby Scots' total to the Vale of Leven, but around one half of that group's contribution to Dumbarton's population. The corollary being that the other nearby counties contributed very little individually to Dumbarton's population. Only Renfrew in 1861 having more than 5% of Dumbarton's people born there, whereas in the Vale at various times Renfrew, Argyll and Stirling contributed more than this. Stirling especially, donated markedly more to the Vale's population than to Dumbarton's. The consequence of contiguity, in the case of the parishes of Drymen and Buchanan, and a history of population transfer related to similar job opportunities at bleachfields and printworks in part related to the Orr Ewing's connections with Killearn [1].

There were definite differences too in the proportion of people from other areas, outwith the nearby counties and Ireland , resident in either place. In Dumbarton this showed great consistency at between 8.1% and 8.5% (according to the sample 8.5% at the latter three censuses) whereas in the Vale the proportion was c 4.1% to 4.8% with the exception of 1871 when they comprised c 6.7% of the population. This may indicate a small growth in their numbers, in the order of 200 over ten years (even in a period which saw considerable out-migration and little overall population growth). They were probably more persistent, being longer distance migrants and exhibiting a reluctance to move away, especially if employed in high status jobs, as many long distance migrants tended to be. Dumbarton's higher totals may have been indicative of a greater number of high status jobs, the buoyancy of its industries and certainly in the comparatively strong representation from Forfar (and Perth), the perception of similar, but possibly more secure, job opportunities than existed in the native county.

NOTES

1. Their home village, still containing Orr Ewing graves in the old churchyard.

CHAPTER 15:

OCCUPATION AND STATUS: ETHNIC AND BIRTHPLACE DIMENSIONS

In Chapters 8, 9 and 10 the overall demographic occupational and social status patterns were considered. Contrasts through time and space were highlighted and explanations sought. After discussing broad migratory patterns (Chapters 11 and 12) and specific contributions by the Irish, 'nearby Scots' and others to the peopling of each area (Chapter 14), this chapter will consider the contrasts in occupational and social status enjoyed or endured by the Irish, 'nearby Scots' and 'Others'.

There was little point in including a 'local' dimension as the object here is to contrast ethnic groups, and many, if not most, locals were the children of migrants. There are instances when 'local' born children of migrants enhanced their status through securing better jobs than their parents, but more often there was an occupational conservatism especially as sons followed in their fathers' footsteps. If this phenomenon is concentrated, if not enshrined, in the 19th century factory system, with sons joining skilled fathers as apprentices, it was not exclusive to this mode of employment. Certainly at the upper end of the social spectrum sons may not have followed so resolutely in their fathers' footsteps, but they did maintain their social status; 'industrialists' sons commonly training for the professions. There were instances here where these sons took factory apprenticeships as part of their industrial training, but their status as apprentices was merely temporary. The gulf between the business and professional classes and even the labour aristocracy was so vast that it was virtually unbridgeable. The former classes were represented by a very small percentage of the population but most adults in employment were industrial skilled or unskilled workers or the equivalent.

This majority in itself can be subdivided by status, occupational category and birthplace. Here the collective experiences of the 'nearby Scots', those born in West Central Scotland; the Irish; and 'Others' outwith the major categories, who made these settlements their home and their workplace are examined.

ETHNICITY AND OCCUPATION: THE VALE OF LEVEN

As described in Chapter 8, the Vale of Leven was essentially host to a low wage, low status factory 'colony' economy. Printworking dominated, and only in 1871 was the proportion of the Vale's employed males working in that industry recorded as being less than 50%. As many as four in every nine of these jobs were of 'lower factory' status. The ratios of 'higher factory' to 'lower factory' status workers recorded under scheme B was:

1861	-	1:2
1871	-	4:7
1881	-	4:9
1891	-	4:75

However, neither in the numbers employed, nor in the status of the work done, did the three identified birthplace groups come close to equity. This was partially a product of their different base populations. To circumvent this problem Location Quotients were used to identify under and over-representation in particular categories, employing the formula thus:

$$LQ = \frac{\text{Percentage of 'Ethnic' Group in Category}}{\text{Percentage of 'Total' Population in Category}}$$

These are given below for the Bleach, Print and Dyeworks occupations and the General Labour category, these being the biggest employer, and a sizeable, but very low status, category respectively.

Figure 15:1 - Location Quotients: 'Nearby Scots', 'Irish' and 'Others'; Males employed in the (A) Bleach, Print and Dyeworks and (B) General Labourer Categories; Vale of Leven

DATES		(A)	(B)
1861	Nearby Scots Irish Others	0.72 0.78 0.45	0.87 3.2 0.46
1871	Nearby Scots Irish Others	0.96 0.57 0.90	0.72 2.87 0.18
1881	Nearby Scots Irish Others	1.03 0.69 1.07	0.51 3.85 0.27
1891	Nearby Scots Irish Others	1.02 0.81 0.66	0.64 4.1 0

Figure 15:1. above, shows that the 'nearby Scots' were slightly under-represented in the major industry in 1861, but had a proportion of their people employed in this industry commensurate with their overall employed population in the Vale of Leven at the latter three censuses.

The 'Others', a disparate group, under-represented in 1861, became more concentrated in this industry in 1871 and 1881, but were once again under-represented by 1891.

The Irish were always under-represented in the Vale's major industry. Particularly so in 1871 when the industry was recovering from earlier difficulties and the Irish who remained

had diversified their activities. They were always in the unfortunate position of being grossly over-represented in the 'General Labourer' category, a very low status form of work often signifying erratic and unreliable employment. As the number of 'General Labourers' rose overall after 1861 to a high point where 7.1% of the sample's working male population were designated thus, receeding to 5.5% by 1891, the proportion of the Irish workforce in this unsatisfactory situation rose sharply, being over 20% or one in five at the later three censuses. When this had almost-reached one in four at the 1881 count, part of the explanation lay in the sizeable immigration of young Irishmen in the preceding decade, many presumably with little relevant work experience. By 1891 the male Irish population had both reduced and aged (ageing also suggests persistence) but even then, few appeared to have been given the opportunity to better their lot. Young, unskilled, new arrivals were far fewer in the penultimate decade of the 19th century and were not sufficient to account for the large proportion of Irish males in this category, which showed only a marginal drop across the decade (c 1.4%). One in every five working Irishmen were General Labourers as late as 1891, with other areas of over-representation being in agricultural labouring and quarrying. With such a heavy bias towards low status employment it is axiomatic that while the 'nearby Scots' and 'Others' generally enjoyed over-representation in the Public and Professional Employment categories the Irish were very poorly represented here.

As described in Chapter 8 around two-thirds of all females in the Vale were not employed, with between 24% and 30% of all females working in the Printworks, the only category of considerable size.

Perhaps surprisingly, given the under-representation of their male counterparts, Irish women were most usually over-represented in this category as figure 15:2, below, indicates.

Figure 15:2 - Location Quotients: 'Nearby Scots', 'Irish' and 'Others'; Females employed in (A) Bleach, Print and Dyeworks and (B) the percentage from each ethnic group in work

DATES		(A)	(B)
1861	Nearby Scots	0.89	25.5
	Irish	1.06	47.8
	Others	0.7	22.4
1871	Nearby Scots	0.98	32.4
	Irish	0.99	32.8
	Others	0.74	36
1881	Nearby Scots	1.01	38.7
	Irish	1.07	50.5
	Others	0.83	32.1
1891	Nearby Scots	0.97	41.4
	Irish	1.19	49.3
	Others	0.79	25.4

Only in that unusual year, 1871, did they fall below a Location Quotient of 1.00 as an out-migration of young, single, Irish printworkers produced an apparent spreading of the remaining Irish female working population into other categories. In this case, the Irish women were not so much diversifying as their male counterparts were (their numbers did not decline) but were leaving, so that those in other categories of employment assumed greater significance.

As the industry recovered there was a counter-swing, an immigration of young, Irish women whose one specific aim was a job in the printworks. Not only were Irishwomen concentrated in printworking, but more Irishwomen worked than those in the 'nearby Scots' or 'Others' categories. This was partially due to a greater need to work, but more importantly it was about the differing types of migration carried out by each group, with the Irish more often single and unattached but the 'nearby Scots' and 'Other' females more likely to be attached to a family on migration.

The out-migration of these young Irishwomen in the earliest decade here is emphasized by the very large drop in the percentage of Irishwomen in work, recorded in figure 15:2 above.

Immigration in this category re-asserted itself in the following decade and although more Irishwomen than 'nearby Scotswomen' were in employment, both groups were concentrated in the Bleach, Print and Dyeing industry. This does not show up in figure 15:2 as an over-representation, because there were few alternative opportunities which would have allowed them to diversify.

Women in the 'Others' category tended to have fewer of their number in work, but those in work were consistently under-represented among printworkers and consequently earned their keep in the other, small sectors of employment such as shopkeeping. Like the Irish they were not in great demand as domestic servants, a job which was the preserve of the 'nearby', or at least lowland, Scot.

The fact that fewer of the women from outwith the contiguous counties and Ireland worked; that they were not to be found in the printworks in great numbers; and the fact that their menfolk were, with the exception of 1881, recorded in under-representative numbers in this industry too, was possibly a manifestation of their small numbers and higher status.

STATUS

Broad occupational categories, with a few exceptions at the [1] extremes of the employment spectrum such as 'General Labourer' or 'Public and Professional', tell little of the social status of workers. Employment categories such as shipbuilding or bleaching, printing and dyeing embraced managers, foremen, journeymen, apprentices and casual labourers. So a group such as the 'nearby Scots' or the Irish may be greatly in evidence in a category of employment, but there is no clue as to the status

which they held within that sector. It is here where scheme B, Anderson's scheme (1972) is most useful, for in distinguishing between skilled factory workers, artizans and persons employed in trade, all in the broad middle range status categories, greater insight is afforded into the status which different ethnic groups were given in a range of like employments. It allows comparison of one group's standing in skilled or 'higher' factory work with their representation in the artizan sector, or their 'lower factory' concentrations to be compared to their numbers in the much less desirable non-factory labourer category. In short, it is a far more useful analytical tool for this study at least, than scheme A, Armstrong's scheme (1974), which is nonetheless included for comparability. But once again the figures are not just those for household heads but for all working males. The contention here being that this paints a more accurate picture of an industry's impact, of the array of different occupations pursued and the status of the work which is done within broad Industrial categories, than any enumeration based solely on household heads.

In figure 15:4 below, comparing the 'nearby Scots' figures with the total percentages for employed males in each category of scheme B, the former are marginally over-represented in the upper echelons. The differences, however, are rarely stark and the proportions tend to fluctuate in concert with variations in the overall percentages recorded in each category. This is understandable as they greatly contributed to that overall pattern with c 34% to c 38% of employed males being from these West Central Counties.

Figure 15:3 - The Social Status of Employed Males in the Vale of Leven under Scheme A (Armstrong 1974) expressed in percentages

DATES		I	II	III	IV	V
1861	T	1.6	4.0	32.8	11.1	50.5
	Nearby Scot	2.0	3.2	35.4	10.4	49
	Irish	-	1.3	19.2	5.1	74.4
	Other	5.2	3.4	46.5	8.6	36.2
1871	T	1.2	6.0	34.4	8.9	49.5
	Nearby Scot	2.6	6.6	40.8	8.1	41.9
	Irish	-	1.1	16.3	6.5	76.1
	Other	1.4	9.5	43.2	4.0	41.9
1881	T	1.3	5.3	31.0	7.2	55.3
	Nearby Scot	2.9	6.5	33.4	6.1	51.0
	Irish	-	-	13.4	2.2	84.3
	Other	3.3	4.9	34.4	6.6	50.8
1891	T	1.2	7.5	30.2	9.0	52.1
	Nearby Scot	2.0	8.3	33.6	11.0	45.0
	Irish	-	1.25	17.5	7.5	73.7
	Other	1.8	16.4	36.4	5.4	40.0

Figure 15:4 - The Social Status of Employed Males in the Vale of Leven under scheme B (Anderson 1972) expressed in percentages

DATES		I	II	III	IV	V	VI	VII	VIII	IX
1861	Total	2.1	2.9	3.7	21.9	11.8	44.7	12.6	-	0.3
	Nearby Scots	2	3.2	4	23.6	12.4	40.4	14	-	-
	Irish	-	1.3	1.3	10.3	9	47.4	30.8	-	-
	Others	6.9	1.7	-	27.6	20.7	27.6	15.5	-	-
1861	Total	1.5	3.6	6.8	20	14.8	36.3	16.7	0.1	0.1
	Nearby Scots	2.6	4	8.8	21.3	19.1	30.5	13.6	-	-
	Irish	-	-	3.3	7.6	7.6	41.3	40.2	-	-
	Others	2.7	4	10.8	17.6	24.3	28.4	12.2	-	-
1881	Total	1.7	3	5	20.9	10.4	45	13.6	-	0.1
	Nearby Scots	3.6	2.5	5.4	22.3	12.5	43.9	9.3	-	0.4
	Irish	-	-	-	6.0	8.9	43.3	41.8	-	-
	Others	4.9	1.6	3.3	19.7	13.1	45.9	11.5	-	-
1891	Total	1.4	2.6	7.5	23.3	9	41.5	14.2	0.1	0.3
	Nearby Scots	2.8	2	7.5	26	11.5	39.1	11.1	-	-
	Irish	-	-	3.8	17.5	1.2	48.8	28.7	-	-
	Others	3.6	5.4	16.1	23.2	12.5	30.4	8.9	-	-

It is in comparing the 'nearby Scots' with the other groups that distinct differences emerge. Predictably the Irish are over-represented at the lower end of the status continuum. This lowly position can be explained by the impelled nature of their migration, perhaps lack of appropriate skills, discrimination and a willingness to take jobs which many Scots would eschew. Their status and the occupations which they pursued, give lie to the charge that they were taking jobs from the native population rather than filling vacancies which the Scots did not take up, mainly because these natives could acquire a higher occupational status. These calculations do not include children of Irish immigrants born here. This problem has bedevilled all studies of the Irish in Britain's towns and cities and it obscures the full impact which their migration had on individual settlements. Being unable to isolate local born children of Irish parentage causes under estimation of the numeric and social impact which this group had. Slaven (1975) has stated that if it had not been for the sizeable Protestant element in the Irish immigration to West Central Scotland then by sheer force of numbers the region would have become a Catholic enclave in a Presbyterian country. This is in spite of the fact the Irish born population of the region at any one time was never more than c 13%. Estimates of the number of Irish offspring have been attempted by Lees (1969) for London and Handley (1964) for the West of Scotland. Many of these children quickly improved on their parents' status, but thus far no one has been able to estimate the rate of improvement.

Irish in-migration may have differed from that of the 'nearby Scots' not only in the forces propelling people away from their place of origin, nor in the distance and obstacles involved, but in differences in the migration streams themselves. The Irish being much more likely to leave as young unmarried individuals, at least after the Famine emigrations, whereas the 'nearby Scots' migration may have had more of a family element to it. In the former situation people were much more willing to suffer low-wage, poor status jobs and endure inadequate accommodation so long as this position was perceived as being temporary. Their lack of

ties, both locational and family, and the low status work which they did led to the exaggerated ebb and flow of Irish people in the Vale of Leven previously identified.

Figure 15:3 graphically illustrates the low status nature of Irish employment with around three-quarters of all employed Irish males having 'labourer' status at the 1861, 1871 and 1891 censuses with a peak of c 84% in 1881 after a large influx of Irish in the preceding decade. Those with skilled status never comprised 20% of the Irish workforce at any census compared to the 'nearby Scots' who always had between 33% and 40% in this category. Figure 15:4 which identifies 'trade', 'higher factory', 'artizan', 'lower factory' and 'labourer' status (points III to IV respectively) may show the ethnic contrasts with less immediate impact, but is more revealing at close inspection. For example, compare the unskilled sector under scheme A, with the discrete 'lower factory' and 'labourer' status sectors in scheme B. By constructing Location Quotients it is revealed that under scheme A the Irish 'unskilled' have a score of 1.47 in 1861, 1.5 in 1871, 1.5 in 1881 and 1.4 in 1891. The equivalent scores for the 'nearby Scots' were in 0.97, 0.5, 0.92 and 0.86 respectively. That is, while 'nearby Scots' were marginally under-represented in this group, the Irish had about one and a half more people in this group than their numbers warranted. A clear enough division, but scheme B's Location Quotients tell a crucially different story as figure 15:5 reveals.

Figure 15:5 - Location Quotients for Irish and 'Nearby scots' in the 'Lower Factory' and 'Labourer' status categories (scheme B)

	1861		1871		1881		1891	
	VI	VII	VI	VII	VI	VII	VI	VII
Irish	1.06	2.44	1.12	2.4	0.96	3.07	1.17	2.02
Nearby Scot	0.9	1.1	0.84	0.81	0.97	0.68	0.94	0.78

The above figures show the situation to be much more complex and dynamic than is exposed under scheme A. In the 'lower factory' category Scots were slightly under-represented, the Irish, with the exception of 1881, were slightly over-represented. The under-representation of the Irish in 1881 cannot be taken as an improvement in their lot; indeed quite the opposite as the figures for those of 'labourer' status show. The 'nearby Scot' may have been less migratory, less inclined towards out-migration at the first indication of hardship, for they certainly do not reveal the fluctuations shown by the Irish [2]. In the 1871 to 1881 decade when there were undoubtedly substantial in-migrations by both 'nearby Scots' and Irish, the former were quite likely to find at least lower factory status work, but the latter were much more liable to end up in unspecified labouring jobs where they were highly over-represented. The situation had eased somewhat by the 1891 count when the ageing Irish population (mode cohort among the male middle life cycle group was the 35 to 44 age group, whereas in 1881 it had been the 15 to 24 cohort) still greatly over-represented in labouring jobs, did at least find factory work easier to come by, a fact re-inforced by their most favourable Location Quotient in the 'skilled factory' worker category. The Location Quotient for skilled Irish males being 0.47 in 1881 and 0.75 in 1891. Although under-represented, it is perhaps an indication that those who persisted were more likely to secure a job in the slowly expanding skilled or 'higher factory' sector. There had also been a slight shift away from the 'Artizan' category. Quite possibly more of the Irish artizans or those who would have become artizans, were being employed as skilled factory workers. For, 1891 apart, the Irish were never as grossly under-represented in this 'artizan' sector as in other sectors with status above 'lower factory' or 'labouring' categories. It may be that those with skills perhaps not appropriate to the Print and Dye Works may have tried to use them in the building industry or in tailoring and shoemaking for example. It is worthwhile noting that after 1891, their lowest representation in this group was in 1871 when those Irish who had remained were inclined very heavily towards the lower end of the status spectrum.

Paradoxically, the situation for the Irish in 1881 looks as bad, but in this case it was against a background of in-migration. There had been an injection of fresh if unskilled, labour around that time, rather than the residualisation which occurred around 1871.

In spite of a dramatic improvement in 'skilled factory' representation over the 1881 to 1891 decade, the stark fact remains that, in the face of a migratory population, the Irish were much less likely to find work of even modest social status than those born in nearby counties.

As for the highest order social status categories, the Irish were hardly represented here at all. Once again the 'nearby Scots' who largely dictated the trend, were not found to have numbers at great variance with the proportion of the total employed male population in categories I and II.

The situation for the 'Others' was much the same as for the 'nearby Scots'. The very small numbers involved at the upper end of the scale do not allow very confident pronouncements to be made, but taking Class I only (see figure 15:4) there is evidence that higher status people were prepared to move further from home to retain or enhance their status, a common strand to many migrations.

ETHNICITY AND OCCUPATION DUMBARTON

MALE OCCUPATION

Dumbarton's occupational structure has already been described as being more diverse, and with a higher proportion of skilled work available, than that of the Vale of Leven where unskilled printworking predominated. So all embracing was this domination that, of the other categories, only building work consistently

employed more than 6% of the Vale's male workforce, whereas Shipbuilding and Machinery apart, Iron and Steel Working, Building and General Labouring accounted for more than 6% of Dumbarton's workforce at a minimum of two census points. Again Location Quotients were employed for the major occupational categories, thus highlighting under and over-representation by ethnic groups as show in figure 15:6 below:

Figure 15:6 - Location Quotients: Major Employment Categories; Dumbarton

		S & M	I & St	GLs	B & C
1861	Nearby Scot	0.98	1.22	0.4	1.6
	Irish	1.07	0.81	2.2	0.2
	Other	1.0	1.16	0.41	1.51
1871	Nearby Scot	0.93	1.2	0.09	1.35
	Irish	0.86	0.97	3.1	0.38
	Other	1.1	0.77	0.09	1.78
1881	Nearby Scot	0.9	1.02	0.42	0.96
	Irish	1.05	1.27	2.2	0.52
	Other	0.88	0.75	0.2	1.48
1891	Nearby Scot	0.85	0.91	0.11	1.4
	Irish	1.1	1.32	2.7	0.35
	Other				

KEY

S & M = Shipbuilding and Machinery

I & St = Iron and Steel Working .

GLs = General Labourers

B & C = Building & Contractors

Irish representation in the major employment categories of Shipbuilding and Iron and Steel trades grew stronger towards the end of the 1861 to 1891 period. The in-migration of the 1871 to 1881 decade was about the known possibilities of work, not mere speculation nor desperation. Again, just how the Protestant/ Catholic divide operated among Irish shipyard workers is not known. Smout (1986) has discussed the skilled Protestant Irish shipyard workers who came to Scotland, albeit at a later date and outwith the period considered here. This movement of labour was part of a circulation quite common in the Shipyards of the Clyde, as the hull of a ship was completed many of the caulkers and riveters moved on to new yards and new contracts, meanwhile the finishing trades, the joiners and painters would be hired to fit the ship out. It was a circulation which increasingly involved the Northern Irish yards.

Another common strand of the Irish experience in Scotland is their preponderance among general labourers. This category of employment should not be confused with the social status label 'Labourer'. For even under scheme B which had 'lower factory' workers (in effect unskilled labourers in factory employment) and 'labourers', the latter category also included, for example, male shopworkers, artizan's and builder's labourers and unskilled transport workers; in other words anyone without a skill who was not employed in factory (or shipyard) work. General labouring was even more precarious than the unskilled jobs mentioned above, and it really implied that if a person was in employment it was by no means permanent. Indeed, it may have signified very irregular employment. As no specific type of labouring has been detailed, these persons would have been at the lower end of the already lowly 'Labourer' social status category. In the burgh, the proportion of workers in this category declined dramatically over the period, but the Irish were always heavily over-represented here, just as they had been in 1861 among agricultural labourers, and were in the small group of quarrymen recorded at each census.

Their major area of under-representation was in the building trades as figure 15:6 shows. Most building firms in Dumbarton at this

time were small scale, family businesses and there was resistance to hiring outsiders, but this did not prevent non-local Scots from being over-represented in this category. Being generally more affluent the 'nearby Scots' and 'Others' may have set up businesses in the town or had relatives who were small businessmen. Furthermore, the Irish perception of opportunities in Dumbarton was based squarely on the larger firms such as Dennys' and McMillan's Shipyards or Dennystown Forge and it was in these areas that they were employed in ever increasing numbers, for once a foothold had been established the possibility of an even greater incursion was more likely.

In short, small business in Dumbarton may have resisted hiring Irish labour, but in any case those who did come to the burgh after the post-famine rush had their sights set in other directions. So it was throughout Scotland that large firms and large projects such as railway or canal construction and more recently hydro-electric dam building were more likely to introduce Irish labour than the local, intimate and insular small scale employers of labour; firms which proliferated in sectors such as building and retailing.

If the 'nearby Scots' and Irish Location Quotients were graphed they would produce an almost mirror image, perfect opposites with the 'nearby Scots' marginally under-represented in the shipyards, moving from slight over-to slight under-representation in Iron and Steel industries. Over-representation in the building trade, with the exception of 1881, and gross under-representation among general labourers. The corollary of this being that they were much more likely to be found disproportionally outwith the major areas of employment and in minor categories such as Public and Professional Services and Transport.

Consequently there was much more balance in the employment pattern of the 'nearby Scots', spread over a range of categories, whereas the Irish tended towards unskilled casual work or predominantly labouring work with the blue riband firms, at least in Dumbarton. The evidence for the Vale of Leven is less strong, Irish males

being under-represented in the printworks, although Irish females were generally over-represented in the same industry. This is indicative of another important trend. The Irish were usually the first to be squeezed out of an industry during a slump. This occurred for a number of reasons. Firstly, they were employed mainly in unskilled work and these people were usually shed in greatest numbers. Secondly, they were less well favoured by the management who generally preferred local or lowland Scots workers. Thirdly, they were most inclined to go elsewhere if conditions deteriorated. More empirical research is needed in a variety of settlements and industries to discover how universal these trends were in 19th century Britain. Certainly Rodger's plea for a focus on the small firms which employed the majority of workers, which he contrasts with the large firms which have so occupied economic historians is welcome. It is a distinction which, as has been suggested above, may have had important ethnic ramifications.

The workers in the 'Other' birthplace category were, like those born 'nearby', under-represented in the larger employment categories, with a concomitant spread into minor categories, particularly those of a professional or managerial nature in line with their slightly higher status. This latter feature of both areas studied here affirms the observed behaviour of those of higher social status who have a tendency to move furthest to maintain or enhance that status.

STATUS

Under scheme A figure 15:7, a clear indication of the relative status of 'nearby Scots' Irish and 'Others' emerges. 'Nearby Scots' were over-represented in the skilled and semi-skilled category and under-represented among labourers. For them, the most commonly held status was that of 'skilled' worker, but while they may have concentrated in the middle categories, there

Figure 15:7 - The Social Status of Employed Males in Dumbarton under scheme A (Armstrong 1974) expressed in percentages

DATES		I	II	II	IV	V
1861	Total	2.9	7.4	48.6	2.6	38.2
	Nearby Scots	2.5	8	66.7	3	19.9
	Irish	1	0.4	23.7	1	73.9
	Others	7.3	14.6	62.2	2.4	13.4
1871	Total	2.7	5.7	51	5.7	34.7
	Nearby Scots	3.8	5.8	61.7	7.1	20.8
	Irish	-	1.4	27.8	1.8	69.1
	Others	4.8	6.3	65	7.9	15.9
1881	Total	1.7	5.5	47.9	5	40
	Nearby Scots	1.3	8.1	58.8	6	25.8
	Irish	-	1	24	3.6	71.1
	Others	3.3	8.2	63.9	4.1	20.5
1891	Total	2.5	8.4	47	7	34.9
	Nearby Scots	3.5	13.3	52	8.4	22.6
	Irish	1	2	27.1	4.8	65.4
	Others	4	6.9	53.5	9.9	25.7

Figure 15:8 - The Social Status of Employed Males in Dumbarton under scheme B (Anderson 1972) expressed in percentages

DATES		I	II	III	IV	V	VI	VII	VIII	IX
1861	Total	3.4	-	9.4	28.1	18	14.2	23.5	0.2	0.6
	Nearby Scots	2.4	1.5	12.7	39.7	24	7.3	11.3	-	1.0
	Irish	1	-	1	17	7.2	26.1	47.9	-	-
	Others	9.8	4.9	7.3	35.4	29.2	3.7	9.8	-	-
1871	Total	3.2	3.2	5	37	13.6	17.4	19.2	-	1.2
	Nearby Scots	4.2	2.9	6.3	43	19	10.1	14.3	-	-
	Irish	-	0.4	1.4	20.3	7.5	31.3	38.4	-	0.8
	Others	5.5	4.8	4.8	49.2	17.5	8.7	9.5	-	-
1881	Total	2.4	2.4	5.5	36.3	13.5	25.6	13.9	0.2	0.2
	Nearby Scots	3	3	6	43.3	16.7	14.6	12.9	0.4	-
	Irish	-	0.3	4.8	19.3	6.1	50.5	19	-	-
	Others	4	3.2	6.5	43	23.6				
1891	Total	2.8	4.7	7.2	38.2	11.7	22.8	12.1	0.2	0.3
	Nearby Scots	4	6.7	12.6	37.2	16.6	14.3	8.5	-	-
	Irish	1	-	4.3	26.6	3.7	48	16.6	-	-
	Others	2.9	3.9	5.9	42.2	17.6	10.8	14.7	-	2

was a definite relative increase in presence towards the upper end of the spectrum as the period unfolded. This does not mean that the bulk of the 'nearby Scots' were becoming increasingly affluent and increasingly concentrated in 'skilled' category and above, for the increase in classes I and II was met with a decrease in class III centring on 1881, possibly as a result of the large out-migration of skilled workers. The preceding decade has been identified as the one which saw most out-migration and least growth in Dumbarton among the 'nearby Scots', but an influx of Irish workers.

The Irish were firmly anchored to the unskilled sector, with Location Quotients between 1.99 and 1.7, and a consequent under-representation in the higher categories. Even in the 'upper factory' category, where it may have been expected that there would have been a stronger presence with the immigration of skilled Shipyard workers from Belfast, Location Quotients of 0.48, 0.54, 0.50 and 0.57 were recorded for each census year respectively.

Numbers from 'Other' areas may have been relatively small, but as with the Vale of Leven, they were significantly over-represented in the upper echelons, a common feature of longer distance migrations.

Once again, scheme B (figure 15:8) presents a more revealing picture, showing concentrations of the 'nearby Scots' in the 'higher factory' and 'artizan' categories and a proportional over-representation in 'trade', and after 1861, in the upper echelons too (classes I and II). They were however, always under-represented in the labouring classes ('lower factory' and 'labourer' categories, VI and VII).

The Irish pattern was expectedly bottom heavy with between 64% and 74% of the sampled male Irish workforce in either 'lower factory' or 'labouring' sectors. There was nonetheless, a definite improvement in the lot of the Irish over the period as an examination of columns VI and VII, in figure 15:8 will reveal.

Not only did they achieve their overall lowest percentages in these columns in 1891, and their highest Location Quotient (0.7) in the 'higher factory' category (which nonethèless still showed them to be under-represented), but there was a move away from the 'labourer' status which encompassed a mass of under paid, irregular, often casual or part-time work. This sector was diminishing in any case as figure 15:8 shows, but the Irish were deserting this sector in greater numbers, albeit from a very high base total in 1861 when c 47.9% of Irishmen were in this category (a testament to their relatively recent in-migration). Their Location Quotients in this sector from 1861 to 1891 were 2.03, 2, 1.37, 1.37. This also highlights that the jobs which the surge of immigrants in the 1871 to 1881 decade could expect to secure were very different than for their fore-runners some twenty years or so before. In 1881 an Irishman, was two and a half times more likely to find himself in 'lower factory' employment than in unspecified 'labouring'. Whereas in 1861 he was almost twice as likely to be of 'labourer' status than 'lower factory' status. This may not be startling evidence of improvement, but the significance of such a shift should not be underestimated. It meant a regular income on which longer term planning could take place, particularly in the realm of housing; an end to an often hand to mouth existence, temporary accommodation and dependence on others.

A major problem with data on the Irish in Scotland is related to the religious/political divide. Was this gradual improvement due to a change in the industrial and economic climate, a greater acceptance of the Irish or did the migrant stream change its complexion from green to orange as the century drew towards a close? Had counties of birth been recorded extensively it may have been possible to judge, but for the Irish born population this was not the case, simply because the instructions to the enumerators did not require such data. Even if a sizeable minority had their counties of birth recorded it may not have provided conclusive proof of change, for across the north of Ireland there was a spread of both Catholics and Protestants, although there were, and are, areas where one community had a marked numeric superiority. In any event the county of birth was recorded in so few cases, and these recordings were confined to, at most, one or two enumeration

districts that misleading conclusions could be drawn if Protestant and Catholic Irish tended to live in separate districts as was the case in Liverpool (Lawton and Pooley 1976).

The probable answer to the questions posed above is that all three explanations have some truth to them. Casual labouring, per se, became less prevalent; the Shipyards, foundries and engineworks were employing people and these industries, in retrospect, were in their heyday. The Irish were enjoying greater acceptance, if only because their sheer force of numbers and their local born children made up such a large segment of the town's population. As Collins (1981) had observed for Dundee, so in Dumbarton the Irish were involved in the creation and evolution of the industrial burgh, rather than being assimilated, or grafted on, to it at a later date. As explained in Chapter 9, the second half of the 19th century saw Dumbarton's occupational and social structure change from that of a small county burgh to a middle sized, bustling industrial town. The Irish were but one part of that industrial implant. The promise of skilled factory work may have encouraged a more affluent, less desperate migrant as this period progressed. Many of the Protestant workers in this group were to be found in numbers in the east end of the town in the 'Newtown' and 'Knoxland' areas in the latter two decades.

But there had been both Catholic and Protestant Irishmen in the burgh before this. The Lennox Herald reported a fight between 'Orangemen' and 'Ribbonmen' in Dumbarton, which the paper makes clear, was an all Irish affair (L H 11 May 1871). For a while one Shipyard refused to employ the Irish as a result of the skirmish but this setback was temporary, and those of Irish birth did find that social patterns were beginning to change for the good. Gains may have been modest, but there was a greater chance of factory employment and skilled work later in the period. This has to be set against the probability that more migrants arrived with appropriate skills or at least experience of the factory or shipyard system; that they were not fleeing from famine, but being drawn towards Dumbarton by an improving web of contacts;

that the economic health of the burgh's industries encouraged them and that many had been in the burgh for a comparatively long time. In contrast they made few inroads in the professions, in trade or in artizanal employment. In the latter category there had been a decline which was due to opportunities in the factory becoming available. In earlier decades 'artizan' status may have been preferable to that of 'labourer', but often in occupations such as shoemaking or tailoring they were barely ekeing out a living and 'artizan' status was misleading. The big contrast was, that by the latter decades, the Irish were being drawn towards known opportunities in the shipyards, not so much fleeing from difficulties at home with the speculative hope of securing work in the burgh.

The 'nearby Scots' being the biggest group, tended to have a big influence on the trends rather than be at variance with them. Generally there was over-representation in the upper echelons and under-representation in the lower ones, and it was in this area that the biggest divergence from the mean occurred. Their Location quotients for 'lower factory' status are compared to those for the Irish in figure 15:9 below:

Figure 15.9 - Location Quotients: 'Lower Factory' and 'Labourer' status among the 'nearby Scots' and Irish (scheme B)

	1861		1871		1881		1891	
	VI	VII	VI	VII	VI	VII	VI	VII
Nearby Scot	0.5	0.5	0.6	0.74	0.6	0.92	0.6	0.7
Irish	1.8	2.0	1.8	2.0	1.97	1.36	2.1	1.4

The 'nearby Scots' were three to four times more likely to be in 'higher factory' employment than in 'lower factory' employment, but paradoxically their Location Quotients for the 'labourer' status category showed less emphatic under-representation. They were, like all groups, proportionally deserting this category, but this was most marked over the last decade considered here. The lack of improvement as seen through the Location Quotients is partly illusory as a result of the very high Irish representation in that group in the earlier two decades which boosted the mean 'total' figure. Even so among the favoured 'nearby Scots' there was still the existence of a sizeable under-class, in the order of 8% of their total employed male population. The Irish were definitely the least favoured ethnic group, but not all of the 'nearby Scots' enjoyed enhanced status as a consequence.

The remarks made about those in the 'Others' category earlier in this chapter apply here too. They were a small, diverse group and their results are prone to error due to this size. It may be their diversity, impossible to unravel here, which gives rise to a status pattern which is difficult to interpret. There was the expected over-representation among the upper echelons, especially in the earlier decades. Later perhaps those who were 'local' born were suceeding to these positions. The very noticeable high status representation in 1861 is again evidence of a recent in-migration and of the need to recruit from outside the immediate local area and indeed the West Central Region.

The 'Others' were also more in evidence in the 'artizan' group than in the 'lower factory' category where they were very much under-represented. So it appears that those from outwith the West Central Region were prepared to move for 'professional' and 'higher factory' status employment and even to skilled 'artizanal' jobs, but the unskilled factory jobs held no interest for them. Nonetheless, they did have people of 'labourer' status, these being mainly from Scottish counties, many doubtless finding employment labouring to their artizan knismen.

A COMPARISON OF STATUS

Despite different industrial bases, the status of the 'nearby Scots' and the Irish in both Dumbarton and the Vale of Leven showed the obvious similarities of a gross over-representation of the latter in the lower strata, with the former's status being slightly enhanced. The Vale having an economy which was built upon unskilled labour, naturally showed greater Irish over-representation in the 'Labourer' category than did Dumbarton (see figures 15:5 and 15:9). In the 'lower factory' category the Irish were more emphatically over-represented in Dumbarton than in the Vale, where they were proportionally represented, that is their Location Quotients were approximately 1.0.

Such was the low status of the Irish worker that over-representation in class IV (scheme B) in Dumbarton is taken to be a sign of a superior status to that of his countryman in the Vale who was very much at the lower end of a low wage system. The corollary for the 'nearby Scots' is of course that emphatic under-representation in class VI, apparent for Dumbarton, is a sign of the higher status employment offered to them in the burgh.

However it is only when the Location Quotients for the 'lower factory' and 'labourer' categories (figures 15:5 and 15:9) are considered alongside the Location Quotients for the same ethnic groups, but this time for 'higher factory' status that a better exposition of industrial workers status in either place is realised (see figure 15:10 below).

Figure 15:10 - Location Quotient of 'Higher Factory' representation among the 'nearby Scots' and Irish

	1861		1871		1881		1891	
	1	2	1	2	1	2	1	2
Nearby Scot	1.1	1.4	1.1	1.2	1.1	1.2	1.1	1.0
Irish	0.5	0.6	0.4	0.5	0.3	0.5	0.7	0.7

KEY

1 = Vale of Leven

2 = Dumbarton

The 'nearby Scots' were extremely consistent in their Location Quotients for this status category in the Vale, whereas in Dumbarton there was a decay in their over-representation, mainly due to the increasing number of 'local' born people falling heir to skilled jobs. The Irish in this status category were poorly represented in either place, this being, as expected, marginally more extreme in the Vale. By 1891, their position had improved slightly, the result of an ageing, less transient Irish population, which was not only allowing them to assume a higher status but is indicative of a greater persistence among those Irishmen who had secured 'skilled' status.

Perhaps, most unusual is the very similar picture of 'higher factory' status in figure 15:10, for either individual ethnic group. The greater proportion of 'higher factory' work available in Dumbarton had little effect on the Irishman's chances of securing that work, but by providing many more jobs of that type for the rest of the population it did allow the Irish to invade the 'lower factory' status jobs and to desert their 'labourer' status niche, a move which was not the prerogative of the Vale's

Irish. In short, despite the greater proportion of 'higher factory' and smaller proportion of 'lower factory' jobs in Dumbarton, for the 'nearby Scot' either area presented an 'average' chance of skilled employment, but for the Irish Dumbarton provided merely a better class of labouring work.

NOTES

1. As only 30% to 35% of females worked and most of these jobs were of low status, this section concentrates on Male Social Status.

2. Although noticeable individual county fluctuations did occur, within a larger category like the 'nearby Scot' one, they were less obvious.

CHAPTER 16: RESIDENTIAL DIFFERENTIATION: SOCIAL STATUS: INDUSTRIAL AND OCCUPATIONAL STRUCTURES

INTRODUCTION

Recent works on residential differentiation have been discussed at length in Chapter 2. The conclusion being that more emphasis should be placed on the mechanics of change rather than on its timing. The discussion in that chapter implicitly accepted the importance of spatial differentiation. Not all writers have taken this as axiomatic. Peet (1977) for example, and other radical geographers would accuse the mainstream of being too concerned with the spatial framework. Others such as David Cannadine in a influential paper published in Johnson and Pooley (1982 Chapter 9) argued for some agreement on the relationship between 'shapes on the ground' and 'shapes in society'. He neither accepts nor rejects that these 'shapes on the ground' matter per se, and are relevant to an understanding of 19th century society, but asks, given the confusion and variety of theory and methodology, for serious thought to be given to the direction of future research.

Most of the authors quoted in Chapter 2 for example Pooley (1979a), Shaw (1977) and Ward (1975) have sought to plot residential differentiation and in explaining the patterns which they observed were under no illusions about the significance of these patterns; believing that changes in social patterning within the urban fabric must be indicative of changes in society. They have not, however, always agreed on what these patterns mean nor indeed on when they evolved, Ward (1975), Cannadine (1977) and Pooley (1979a).

Here,by studying smaller West of Scotland settlements, spatially close but structurally different, contrasts with these studies can

be achieved, explanations for the differences and similarities can be advanced, not only in terms of the chronology and extent of segregation but on its mechanics too.

The significance of the observed patterns can be discussed and compared given that the social, occupational and ethnic nature of society in Dumbarton and the Vale of Leven has been outlined in earlier chapters in a largely aspatial way.

METHODOLOGY

In earlier chapters occupation, migration and demographic structure, for instance, were dealt with separately for Dumbarton and the Vale of Leven and then comparisons were made. Here in an attempt to highlight the mechanics of differentiation rather than mere description of it, segregation of distinct groups in the Vale and then Dumbarton are considered in turn, allowing contrasts between what may be regarded as general or common traits in the development of differentiation with those which may be due to particular or peculiar local circumstances. This being an attempt to circumvent the reservations expressed earlier over studies which concentrated on the development of residential differentiation in a single settlement and used perhaps very individual approaches to the topic in terms of classification schemes and methodologies, which did not lead very far beyond a rudimentary discussion of the factors which may have caused segregation to develop.

In this study each adult male's occupation, social status and ethnic group is considered using indices of segregation (Is), dissimilarity (ID) and location quotients (LQ). The social status classification scheme is again Anderson's (1972) although selected indices using Armstrong's classification (1974) are given in the appendices to allow comparability. The difficulties of assigning a person to a status cohort based on their occupation was discussed in Chapter 7. Consequently most emphasis here is

on the relationship between groups which proved easy to define using occupational data, particularly the 'higher' and 'lower' factory workers, 'labourers' and the professional and managerial groups. Least emphasis is thus placed on the role of 'artizans' and those in 'trade' as it was often difficult to determine their status on the basis of the information given in the cebs. In any case the relationship between groups within the unequivocally 'working class' sector of society is thought to be the most crucial. For it was only when fragmentation along status lines inside that class was observed within the spatial dimensions of a town that it was thought to be differentiated in the modern sense.

The fundamental unit of analysis is the enumeration district (ED), but in addition for Dumbarton, street level indices have also been produced to examine the relationship between these different scales of measurement. This latter method was not employed for the Vale of Leven mainly due to the number of small streets there, which even with a large sample such as this (c 13% - 22%) would invalidate the method given the small number of 'respondents' per street. However as the street as well as the enumeration district of each person's location was recorded, individual streets with a large number of the sample population resident are referred to. By employing each enumeration district as a fraction of the Vale of Leven's townscape, rather than as a fraction of its individual village and discussing differentiation in this context, implicitly suggests that this group of four villages was essentially an agglomeration. That they grew, prospered and withered from the same industrial root; and they were strung out along two roads either side of the River Leven and along the river itself with little, if any, intervening rural land; that there was a daily circulation of the workforces and an observable inter-village mobility of families, all serve to support this view. Each village did have its individual character. The mass of population in each village directly relied on the printworks for their livelihood, but each had its own service sector and professionals, its artizans and labourers.

In attempting to analyse each village separately it had also been intended to take each group (ethnic, occupational or social) and each enumeration district not only as part of the Vale as a whole but as part of an individual village. However this proved impossible for all but the largest of groups as the ED scale of analysis proved too crude for measurement of variations at village level. The problems encountered in this respect certainly lend weight to Gordon and Robb's (1981) disquiet over large scale factorial analyses of larger towns and cities. There may be a great variety of different groups encountered within even a small area like an enumeration district. Differentiation within such an area may be more subtle than the large scale studies give to imagine, but this does not invalidate a larger scale approach. On close inspection of a tiny corner, the urban mosaic will indeed have a myriad of complex and perhaps seemingly unrelated pieces. It is only by stepping back and considering the whole that the picture can be fully appreciated.

Dumbarton and the Vale of Leven are not nearly as big as many of the towns and cities considered by those studying differentiation, for example Glasgow (Lamont 1976), Liverpool (Lawton and Pooley 1976) and Leeds (Ward 1980) but the sampling 'mesh' is approximately the same, with the exception of the street by street analysis of Dumbarton, and so there is comparability in this respect which permits the testing of conventional wisdom which suggests that the degree of segregation here would not have been as great as in the larger settlements. But this is only one facet of differentiation. Its changes through time and the interplay of factors which fashion it are considered here over four census years including 1891. Thereby, like Lamont (1976) and Robb (1979), taking the study of segregation in these small settlements into the late 19th century which is when Ward (1975) believes that modern levels of differentiation were first fully present in British cities.

SOCIAL DIFFERENTIATION

a. SOCIAL STATUS GROUPS I AND II: PROFESSIONAL, MANAGERIAL AND CLERICAL WORKERS

i. THE VALE OF LEVEN

Within the differentiation debate close attention has been paid to the development of areal disassociation of groups within the manual 'working classes' as an indicator of modernity. The separation of the middle classes, especially professional and managerial people, from the 'working classes' was already a feature of most mid-Victorian British cities, or at least it was perceived to be by most social commentators at the time. Less evidence is available for smaller towns with Warnes' (1973) work on Chorley being a notable exception.

Figure 16:1 identifies comparatively low levels of segregation for this group, although by Duncan and Duncan's (1955), admittedly arbitrary, standard where an 1s of 30 or above was evidence of segregation, they were indeed separated as early as 1861. This in a small group of settlements which had only thirteen sampling units (enumeration districts) at that time. Progression towards increased levels of segregation is far from inevitable in the following twenty years but a significant leap in their 1s level between 1881 and 1891 is evidence of the increasing scale of their segregation replicated in their increasing disassociation with groups VI and VII.

In 1861 approximately 38% of this small group of 'middle class' people (consisting in total of c 5% of the working male population) lived in two EDs, one in Alexandria adjacent to but separate from (a) the old core of the

Figure 16:1 - Indices of Dissimilarity and Segregation for Social Status Groups in the Vale of Leven 1861-1891 (by Enumeration District)

INDICE	SOCIAL STATUS GROUP	1861	1871	1881	1891
I_D	I, II, v, VI, VII	34.5	39.9	39.7	61.3
	IV, v, VI, VII	26.5	12.9	26.8	19.6
	IV, v, VI	24.3	14.5	24.5	23.4
	VI, v, VII	25.1	29.2	21.1	27.6
I_S	I, II	30.1	35.7	31.8	57.9
	III	51.4	33.5	32.5	38.0
	IV	19.4	10.9	20.4	15.3
	V	28.7	22.5	18.7	34.9
	VI	16.1	14.4	13.4	17.7
	VII	28.7	24.9	25.6	22.5
	VI, VII	20.6	13.1	17.9	14.8

village, and (b) the EDs close to the printworks: this was centred on Bank Street; and the other was in Jamestown a new village at this stage, built by J Orr Ewing and intended for his factory workers. The LQs were 2.3 and 2.0 respectively, but this should not be taken as evidence of domination within an ED because the group was so small In Jamestown for example which consisted of the single ED it meant that of the 9.5% of the Vale's total male population living there only 1% was in this status group, that is approximately 1 in 9 were of Professional, managerial or clerical status. It does however demonstrate the attractive powers of new housing in spite of an apparently unfavourable location close to the printworks.

By 1871 the highest LQs (3.2, 5 and 2.3) were for EDs respectively at the northern end of Jamestown furthest from the works in northern Bonhill in a partly 'landward' district and in Alexandria again adjacent to rural Cardross Parish. In the last case as the village had grown, the movement of this group towards the periphery became more pronounced. As Alexandria's importance as the service and retail centre for the valley grew, so did its share of the professional and managerial workers. Jamestown's initial attractiveness had waned and its subsequent growth confirmed its industrial status as the relative proportion of group I and II males declined. Renton always the most predominantly 'working class' village in the valley had no significant concentrations of this group until 1891 when an LQ of 4.1 was recorded in a district at the extreme west of the village abutting steeply rising ground and including some large villas situated above the village proper. The major problem of interpretation here is caused by the apparent variability in the locations of this group. They were a small group scattered among four villages, consequently even a modest development of middle class housing had a

great effect on the concentrations of group I and II people resident in a particular ED. One identifiable theme in the changing locational preferences of this group is their movement towards the periphery of each village into new houses close to the countryside. Docherty (1981) in a town plan analysis of the Vale of Leven identified this movement, which is confirmed by linking address information from the cebs with large scale plans of the valley.

This may not be a universal theme in villages of this size, and here it appears to be linked to increasing industrialization, plot infilling and the influx of lower status individuals to the inner areas of the villages.

The sharpest increase in segregation occurred over the 1881 to 1891 decade and would appear to be due to two main factors namely, population growth and housing developments. After 1871 the population rose steeply and the growth between 1871 and 1881 was about 4,000. The following decade growth was around 3,500. This latter period saw an increase in housebuilding (Docherty 1981), which facilitated the segregation of those in groups I and II. The growth in population exerted pressure on the built environment and stimulated the demand for housing which, in causing the settlements to expand and the better off to move into the new houses, increased the scale of segregation. Consequently rather than occupying the corners of several enumeration districts, the class I and II houses became more concentrated in a few enumeration districts. The overall number of EDs growing as the villages grew in size and population

ii. DUMBARTON

In Dumbarton this group was again highly segregated, see figure 16:2, although in this case the gap becomes widest in the 1871 to 1881 period. As with all groups recorded in Dumbarton the expected increase in segregation as the sampling mesh changed from ED to street scale was by no means inevitable (Short 1980). This is discussed at greater length in the concluding chapter, but here it is perhaps sufficient to suggest that the main, but not the only, reason why this is the case here is the size of Dumbarton's High Street. The High Street dominated the town both in terms of its length, breadth and its densely populated warrens. In 1891, for example, it encompassed three EDs exclusively and was partially included in three others. It contained c 24% of the population, approximately 4,280 people.

In 1861 it ranged across two entire EDs and partly impinged on another three, when at that time it had c 39.5% of the population or 3,330 people living in it. Evidence from the cebs and large scale plans suggest that not only were the EDs within the High Street distinctly different but that there were big differences at individual address level. Small cottages, less prevalent in 1891, were often to be found side by side with large, sprawling tenements. Certain addresses recur in newspaper reports of overcrowding and illegal lodger keeping. For example the Lennox Herald of the 8 June 1971 in reporting on cases of the latter coming before the court highlighted the 'closes' at 137, 171 and 179 High Street as having the greatest problems. It is significant that by 1891 in almost all cases, whether measuring segregation or dissimilarity (1s or 1D), scores at street level are greater than scores at ED level. It was a dichotomy much less in evidence in 1881.

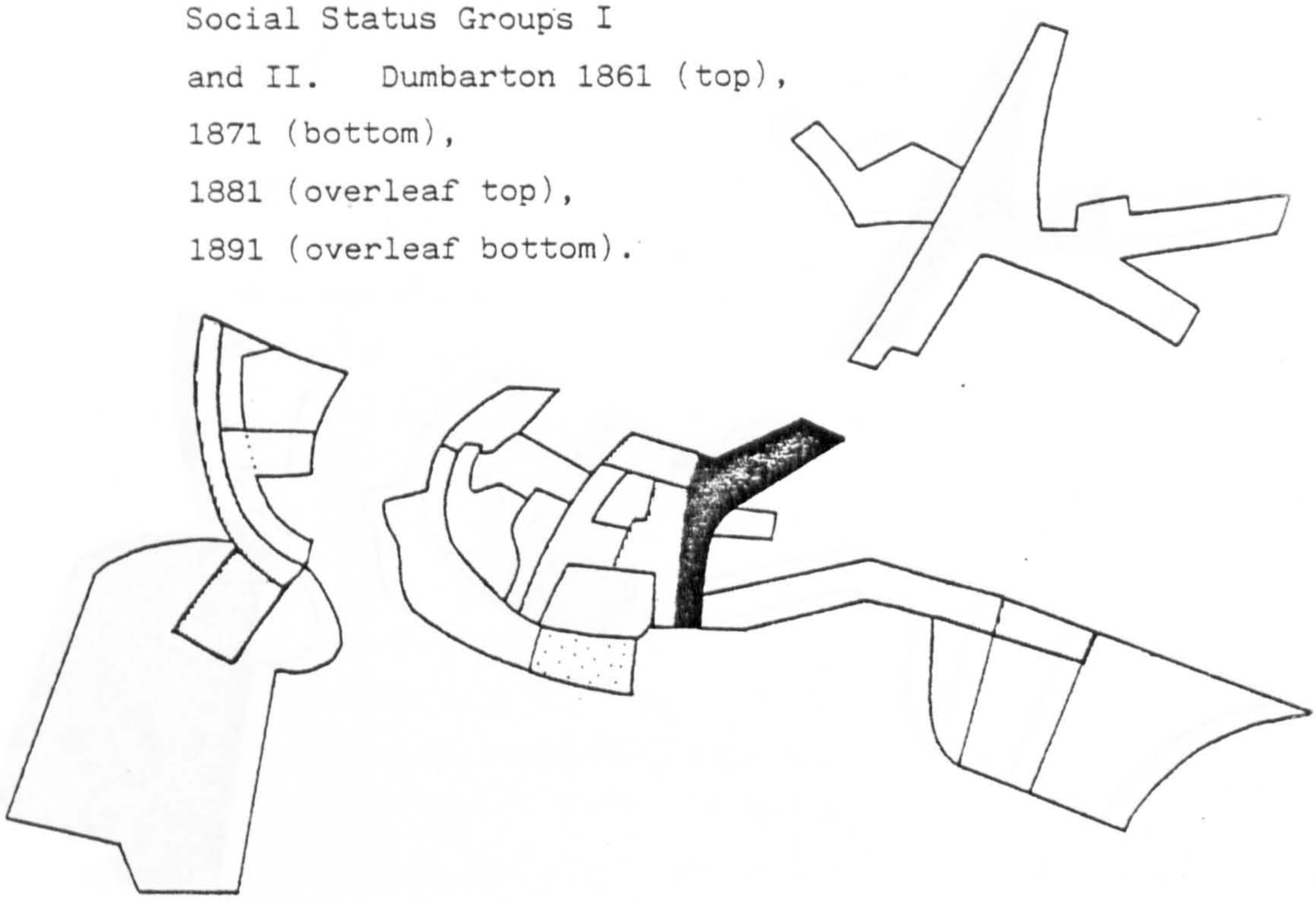
Figure 16:2 - Indices of Dissimilarity and Segregation for Social Status Groups in Dumbarton 1861-1891 (by Enumeration District and Street)

INDICE	SOCIAL STATUS GROUP	1861		1871		1881		1891	
		ED	ST	ED	ST	ED	ST	ED	ST
I_D	I, v, VI, VII	47.7	50.8	36.1	33.4	54.3	51.2	55.3	61.3
	IV, v, VI, VII	22.4	24.4	20.8	25.5	22.6	22.2	35.4	37.4
	IV, v, VI	37.8	29.2	36.5	27.4	33.6	29.8	34.1	40.0
	VI, v, VII	37.8	23.2	47.1	30.5	34.4	33.2	31.4	21.1
I_S	I, II	34.5	40.2	34.6	35.5	50.2	41.8	42.8	46.8
	III	30.2	33.1	36.8	43.4	32.0	31.0	34.0	36.2
	IV	16.4	19.8	17.3	18.6	18.0	21.1	17.3	20.4
	V	17.1	18.7	17.6	19.0	11.1	13.6	20.3	22.2
	VI	38.6	30.4	33.2	29.8	33	29.4	33.9	34.7
	VII	16.8	19.2	29.8	26.2	17.2	25.8	27.5	32.6
	VI, VII	20.4	22.7	18.7	22.7	23.2	23.8	31.8	31.5

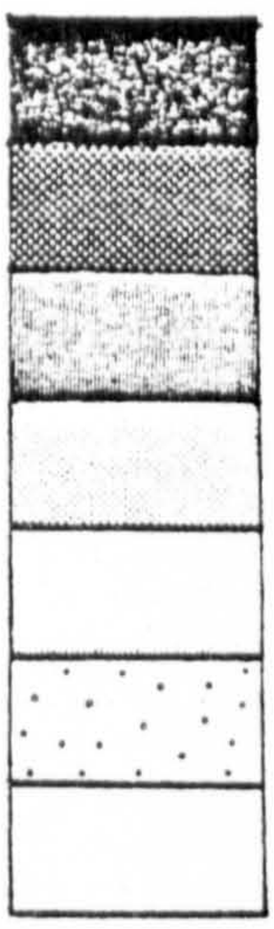
Over the succeeding decade the High Street's share of the burgh's population dropped from 31% to 24%. Its growing demise as a residential centre, together with the proliferation of new streets was indeed beginning to have the expected effect.

Examining the concentration of group I and II individuals at street scale provides interesting evidence of persistence and change as the burgh grew, as figure 16:3 shows. They were extremely persistent in their locational pattern, particularly in the Strathleven Place/Bonhill Road area and at Kirktonhill. Set apart from the old core of the burgh it lies atop a steep hill overlooking the Clyde and the West Bank of the River Leven, very much a typical type of location in British industrial towns for these large detached and semi-detached villas. This pattern was established by 1861 when the burgh's population was only 8,440 and must in part be attributed to the intense overcrowding in the dirty and disease ridden High Street area. So even in a small town such as this rapid industrial and population growth acted as centrifugal forces for those able to afford an escape. The percentage of those class I and II males living in Kirktonhill/Westbridgend actually declined from c 22% in 1861 to 14.6% in 1891 and yet they were always highly over-represented there. The reason being that Kirktonhill was a large, but low density housing area, spatially and socially distinct, whose character would have been destroyed by addition and infilling. Consequently with the growth in population and in class I and II males they continued to situate in the other favoured areas. This led to further developments in the Bonhill Road, Roundring (or cemetery) Road area and its southern offshot Strathleven Place.

Figure 16:3 - Location Quotients
Social Status Groups I
and II. Dumbarton 1861 (top),
1871 (bottom),
1881 (overleaf top),
1891 (overleaf bottom).



LOCATION QUOTIENTS



3.5 and above

3.00 - 3.49

2.5 - 2.99

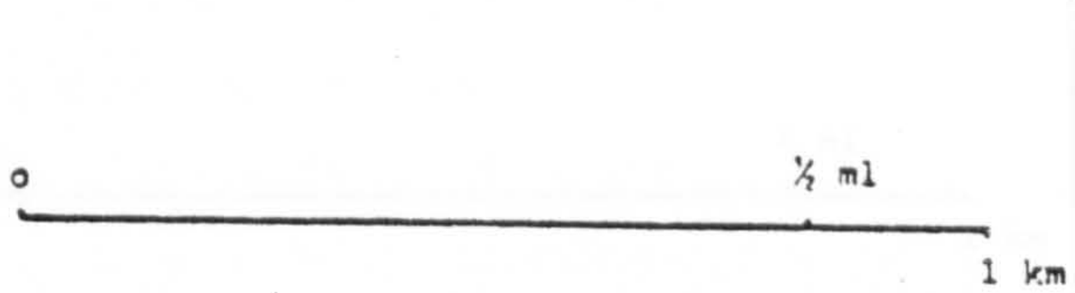
2.0 - 2.49

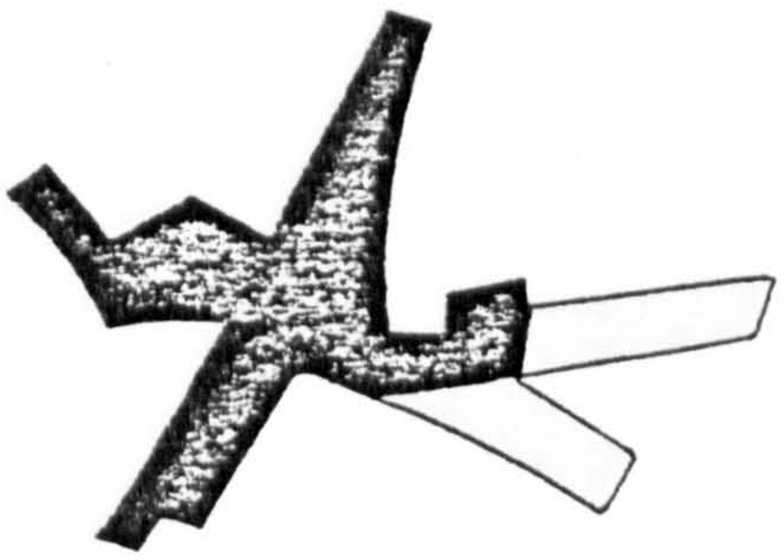
1.5 - 1.99

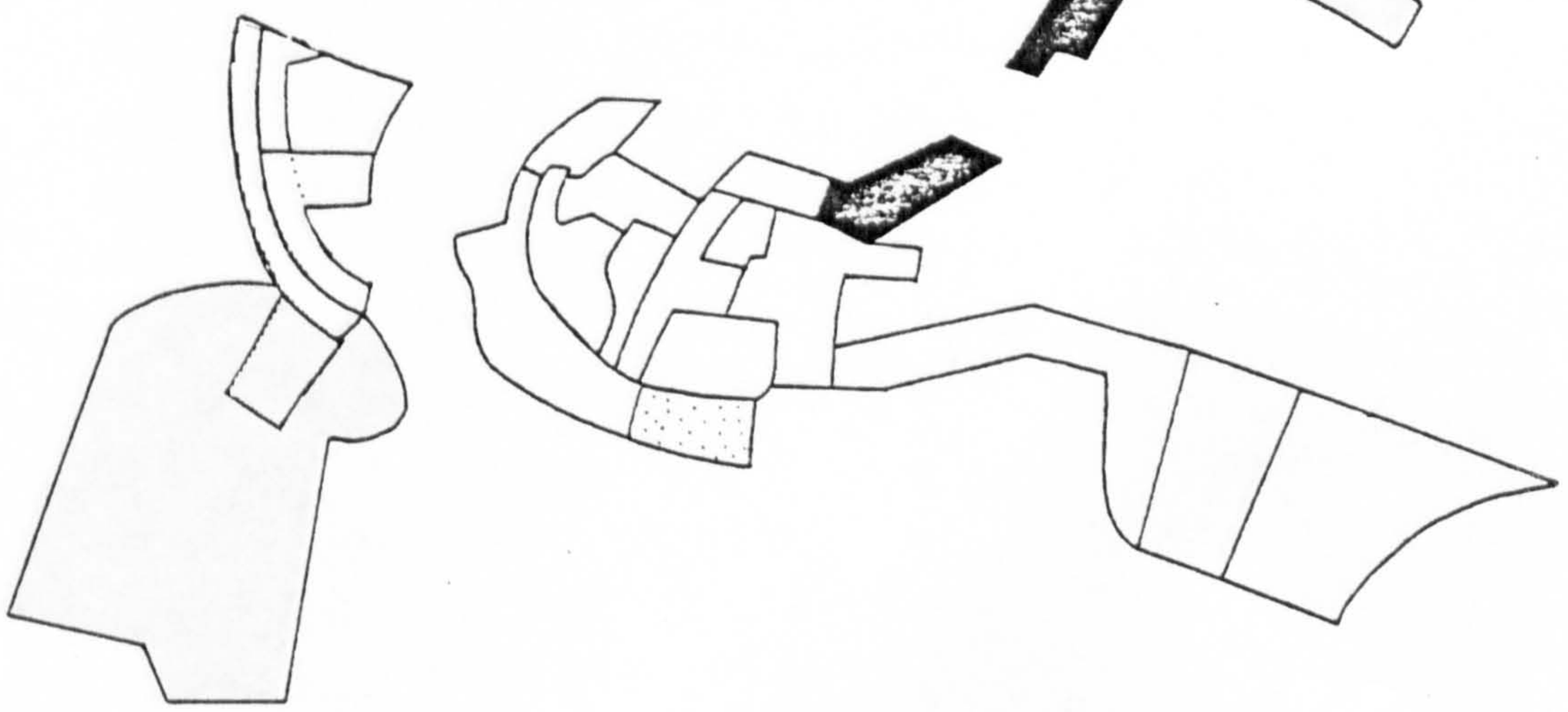
1.0 - 1.49

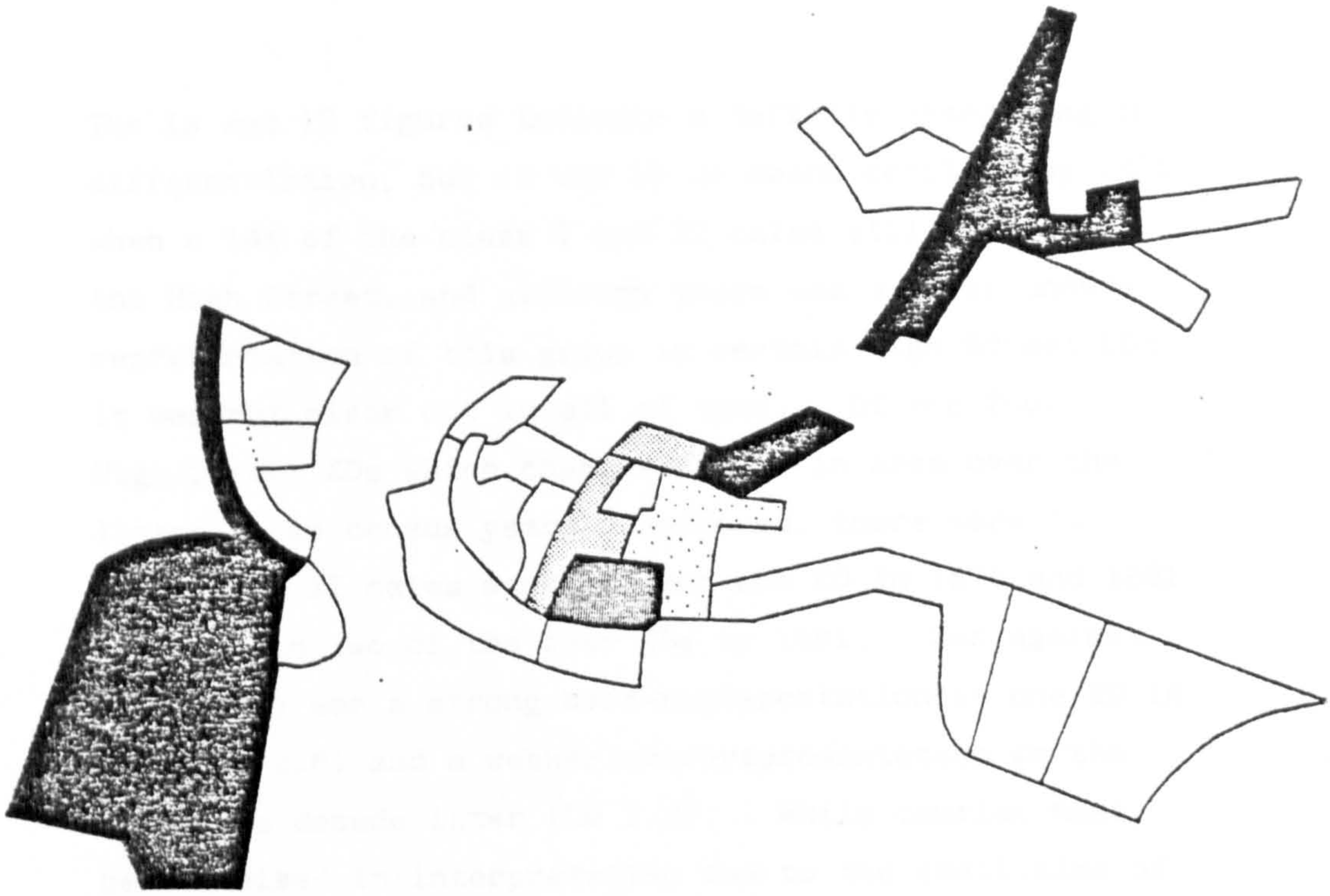
less than 1.0

N

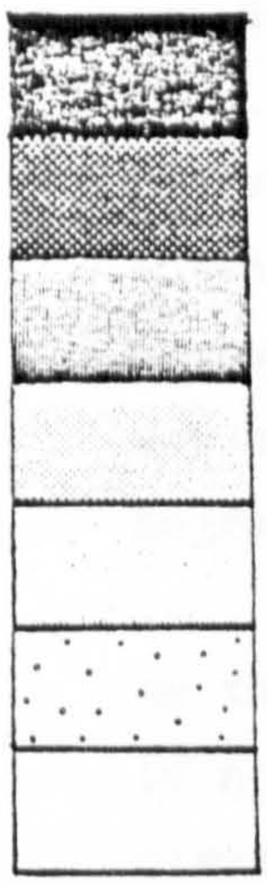








LOCATION QUOTIENTS



3.5 and above

3.00 - 3.49

2.5 - 2.99

2.0 - 2.49

1.5 - 1.99

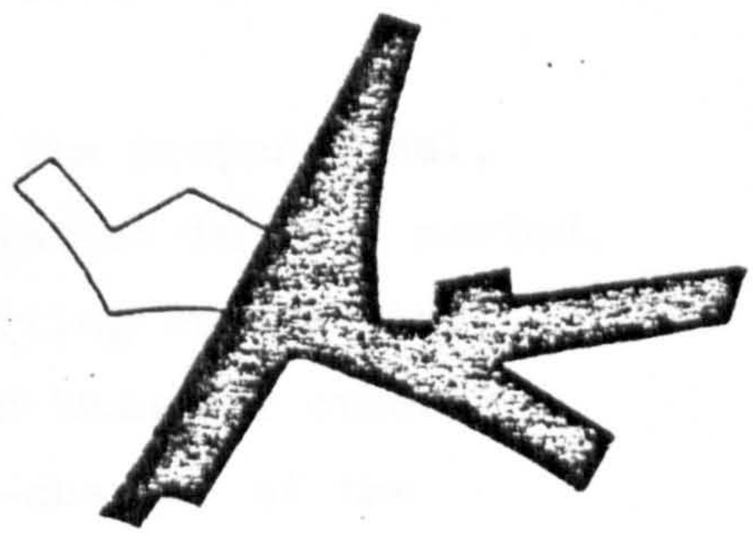
1.0 - 1.49

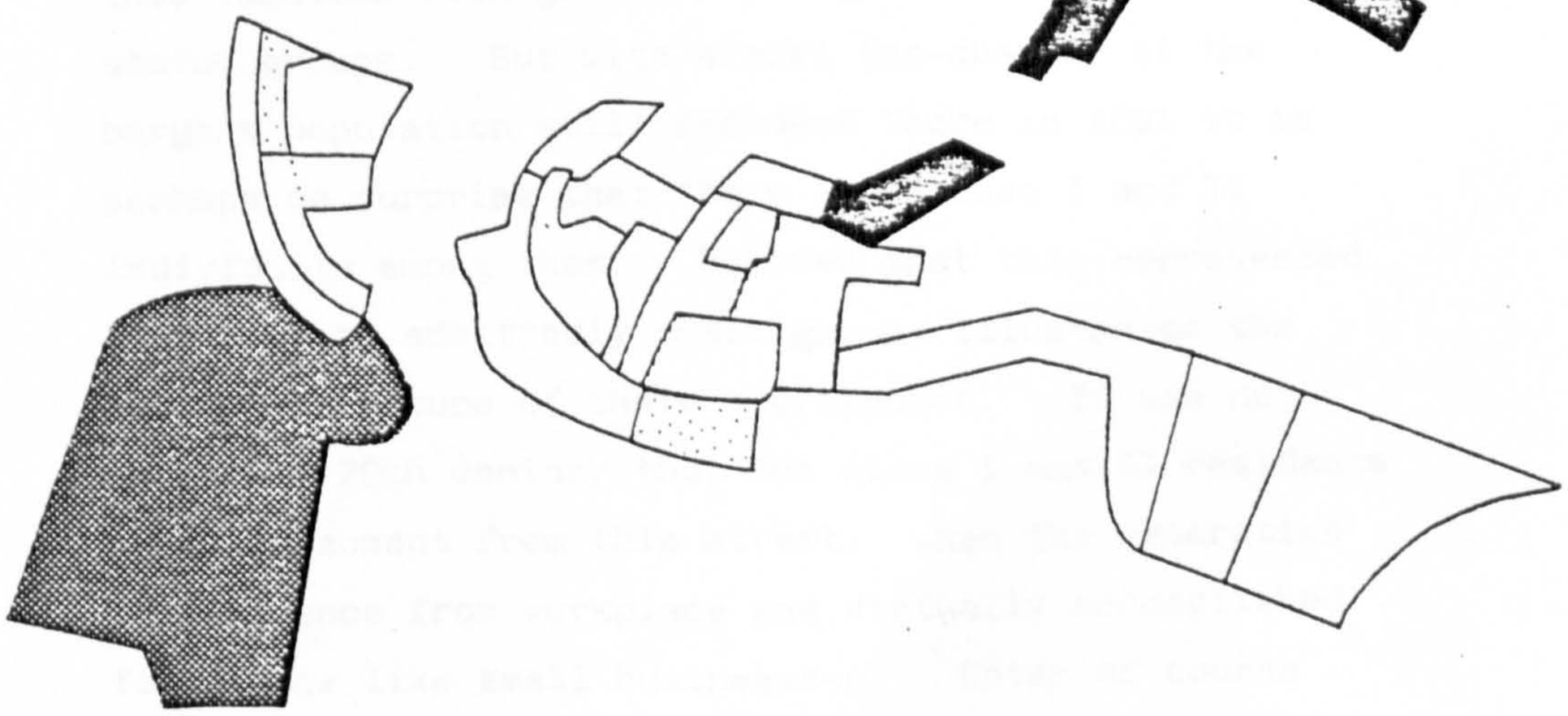
less than 1.0

N

0 ½ mi

1 km





The 1s and 1D figures indicate a definite sharpening in differentiation, but it was by no means complete by 1891 when c 14% of the class I and II males still lived in the High Street, and although there was a gross under-representation of this group in certain High Street EDs it was not clear cut in all of them. Of the four High Street EDs which changed little in area over the latter three census years considered, there were no class I or II males sampled from one ED in 1871 and 1881 and none in two of the four EDs by 1891. Set against this there was a strong over-representation in one ED in 1881 (LQ 2.6) and a weaker over-representation in the same ED a decade later (LQ 1.2). While caution must be exercised in interpretation due to the small size of this group there was a gradual, if uneven, retreat from the High Street. This process was incomplete by 1891 and it may have been temporarily stemmed by early redevelopment of some High Street frontages. However, intense plot repletion and the fine matrix of different status and occupational groups occurring both vertically and horizontally makes detailed discussion of segregation in the High Street at ED level almost futile.

As the High Street continued to shed its proportional, if not its actual, share of the population in this period, class I and II individuals were deserting or avoiding this location with greater conviction than the other status groups. But with almost one-quarter of the burgh's population still resident there in 1891 it is perhaps no surprise that there were class I and II individuals among them. However that this represented 1 in 7 of an admittedly small group, illustrates the incomplete nature of their segregation. It was not until the 20th century that the class I and II residents would be absent from this street; when the separation of residence from workplace was virtually accomplished for groups like small businessmen. Later of course most other groups would follow, leaving a small but heterogeneous residual population.

For social status groups I and II the most persistently under-represented area was not, as might have been expected the decaying medieval heart of the burgh, but the Dennystown development, even when it was new and attracting the skilled working classes in 1861. The enumerator at that date in departing from the usual practice of a simple description of the ED as a preface to the household entries wrote, somewhat dismissively, that this area was 'all inhabited by the working classes'.

The preceding paragraphs highlight two important points about the location of the professional, managerial and clerical workers and residential differentiation in Dumbarton. Firstly, that it was still in the interests of some professionals to locate in the centre of the town with their businesses. Secondly the separation of this group from the manual worker was most complete in housing areas specifically designed for the middle classes or in custom built areas of workers housing. This second point may seem axiomatic but its corollary is noteworthy; that in the old core segregation at ED or street scale was by no means at 'modern' levels.

b. HIGHER FACTORY WORKERS, LOWER FACTORY WORKERS AND LABOURERS

i. THE VALE OF LEVEN

In both the Vale of Leven and Dumbarton 'higher factory' workers exhibited low levels of differentiation, but there were fundamental differences in their separation from 'lower factory' workers which had their roots in the occupational structure and the urban patterning at either location.

Among the 'working classes' in industrialized settlements like these the demands of industry largely fashion

social status configurations which are derived from the occupations of individuals. So in the printworks of the Vale the need for skilled workers was much less than in the shipyards and foundries of Dumbarton. In the former between 20% and 24% of employed males were 'higher factory' workers (group IV) and between 36% and 45% were 'lower factory' workers (group VI). In the latter the figures were between 28% and 38% in the 'lower factory' category.

The relatively small numbers of skilled workers, that is, those with 'higher factory' status, in the Vale of Leven is partly why there are few concentrations of such workers detectable at ED level, but this is not the sole reason. The cellular structure of the Vale's urban and social morphology had its role to play in keeping factory workers undifferentiated at this scale. The justification for treating the Vale of Leven as a single industrial entity relying almost solely on printworking is irrefutable, but its urban structure was importantly different from Dumbarton's in that it developed around three main growth poles, the villages of Alexandria, Bonhill and Renton. Furthermore, there were at least eight substantial factories strung out along the River from north of Alexandria to south of Renton where the river becomes tidal. Now, there is no evidence to suggest that workers always lived next to the factory which employed them. There was a great deal of circulation between the villages which were not so big as to exclude a daily movement of workers. Disputes over the toll exacted on the 'Bawbee Bridge' between Alexandria and Bonhill prove that for these two villages there was such daily commuting. Walking from the centre of Alexandria to Renton's southernmost printworks (Dalquhurn) or from Renton to Alexandria's northernmost printworks (Levenbank) was a journey of no more than two miles, but this added inconvenience before and after a

long shift at the factory, coupled with the need to live close by if there was short term hiring as Pooley (1982) has demonstrated for the Liverpool docklands, would have encouraged workers to live close to their place of occupation. The very fluid housing situation would facilitate this clustering causing a locational fragmentation of individual status groups but a unity of residence and workplace. Living some distance from one's place of work may still have been a somewhat alien concept for most people. It seems reasonable to conclude that the separation of residence and workplace, partly responsible for increasing segregation in towns, did not occur dramatically, rather separation was a gradual process: living above the workshop or on the farm; living next to the factory or within a few streets of it; and, living apart from the workplace but with easy access via public or private transport.

A steady increase in the scale of segregation did not happen over this time period. The most important variation detectable in the 1871 data was once again related to the depression of the previous decade which resulted in a slackening in population growth (see figure 16:1). Part of the consequence was to cause the skilled or 'higher factory' workers to become even less differentiated from their unskilled 'lower factory' counterparts, possibly because lack of competition for housing caused much of the inferior and 'made down' properties to be deserted for better quality accommodation then available at more reasonable rents. Further evidence to support this view springs from the highest index of dissimilarity between 'lower factory' workers and non factory 'labourers' recorded for this period which occurred at this point. The 'lower factory' worker in becoming closer in spatial configuration to his 'higher factory' colleague became less closely

associated with the non-factory labourer, (see figure 16:1). The movement may be partly illusory stemming from migrational behaviour which saw the least favoured 'lower factory' worker leave the Vale (the proportion of 'lower factory' workers in the employed male sector in 1861 was c 44.7% and 36.3% in 1871). A natural consequence of the prolonged difficulties acting upon a very fluid population would be to cause the recently arrived, the unestablished, the sporadically employed and the poorly housed to leave first. These would be the people least likely to be living beside a skilled factory worker and most likely to be living alongside poorly paid non-factory labourers. For example if the prevalence of lodging is taken as an indication of industrial demand outstripping housing supply, then the drop in the proportion of males in lodging from c 8.7% in 1861 to 4.5% in 1871 would tend to support the assertion that a slackening in demand eased the pressure on housing and allowed some upward filtering of 'lower factory' workers to take place, with non-factory labourers firmly anchored in the poorest housing. Of course, those who had established themselves in regular 'lower factory' employment, who could afford reasonable housing and who had been around long enough to pick their way through the housing market were more likely to be living beside 'higher factory' workers already and less likely to leave.

ii. DUMBARTON

In Dumbarton the 'lower factory' workers were the most segregated of the three manual working categories considered here. This segregation is the key to the high index of dissimilarity produced when they are compared to their 'higher factory' colleagues. The main areas of concentration for 'lower factory' workers

were College Street in the medieval core and, from 1871 onwards, Dennystown. The former concentration had an immediate ethnic dimension, being the most persistent area of Irish settlement in the burgh. The latter area too became an Irish enclave. Thus, as the Irish tended towards 'lower factory' work, ethnicity and status cannot be satisfactorily disentangled in this instance.

In 1861 Dennystown was a new development of workers housing; by contemporary standards conditions were far superior to those being experienced 'over the bridge' in the old burgh, although by the end of the century they must have appeared to be fairly rudimentary. This suburb was:

> 'designed to house some 210 families, or around 1000 persons, in rows of two-storey blocks ranged round three large courtyards .... By the standards of the period the Dennystown houses were fair sized, parlours or living rooms measured 15' x 11'6" bedrooms 10'10" x 9'3½". The dwellings were of 1, 2, 3 or 4 apartments and the estate streets and squares were lit by gas. The back premises were supplied with wash-houses, coal cellars and privies and a water supply was designed to be provided to each of the three courtyards but the pipes and water troughs were not installed until 1861. The provision of a direct water supply to each house had to wait for a further twenty years and the impetus given by a growing official concern with public health and a typhoid epidemic in the Dennystown area in 1880. By this time the estate had passed out of the hands of the Denny family and for some years prior to 1881 the deterioration of Dennystown and the high level of mortality associated with the area had been a cause of conern to the local authority' (Osborne 1980 P4).

Initially Dennystown attracted skilled 'higher factory' workers in greatest numbers. The problems of intense overcrowding afflicting the High Street area could not be kept at bay and, in spite of determined efforts by the Dennys, lodging and sub-letting became commonplace. The result was that the difficulties being experienced in the old core of Dumbarton soon infected the new suburb. As early as 1864 there was an average of three persons per room in Dennystown, with some two apartment dwellings containing as many as ten or fifteen people (L H 17 September 1864). This tended to repel those skilled workers who were turning their attention towards housing developments in the east end of the burgh. The shift in status groups within Dennystown over this period can be gauged by examining figure 16:4 below.

Figure 16:4 - Location Quotients: Higher and Lower Factory Workers; Dennystown 1861 and 1871

	1861	1871
Higher Factory	1.2	0.88
Lower Factory	0.5	2.1

The major areas where the skilled or 'higher factory' workers located in greatest numbers had quickly shifted from Dennystown to the 'Newtown' and Knoxland areas in the east initially along Glasgow Road, Clyde Street and Leven Street, the latter two being described as 'new streets' in 1861 (cebs 1871). Once again 'higher factory' workers were moving into the new industrial workers housing as soon as this was built and the 'lower factory' workers were definitely succeeding

them in Dennystown. This overall pattern does need qualification. First, 'higher factory' workers were so numerous that they may have had areas of concentration, but were never greatly segregated from the mass of the population. Secondly, while the classic filtering situation described above may have had the effect of maintaining the separation of 'higher' from 'lower' factory workers, there was also a definite occupational dimension to consider (see next section).

The consequence of building in Dumbarton East was to cream off skilled shipyard workers who were moving, along with the shipyards themselves, away from the west bank of the Leven, towards the eastern edge of the town where there was room for both industrial and residential expansion. Denny's shipyard was moved in 1867 from Woodyard on the west bank to its final, and largest, site the 'Leven' shipyard near the confluence of that river with the Clyde. With the result that shipyard and foundry workers who exhibited a fairly low level of dissimilarity in 1861 (1D 23.4 at ED level) had dramatically diverged by 1871 when the 1D was 51.5 at ED level. The foundrymen, with proportionally fewer skilled men in their ranks than was the case in shipbuilding, concentrated in Dennystown near the burgh's largest and most enduring forge (see following section on 'industrial segregation').

Just why the 'labourer' status group in Dumbarton should exhibit less of a tendency towards segregation than the 'lower factory' group would appear to be due to the large numbers of such people initially, and, more crucially to the disparate nature of the group. Included here were almost all unskilled and non-factory workers, builders' labourers, quarrymen, farm workers, general labourers, hawkers and artizans' labourers. Their growing segregation was an uneven process.

Many were intimately tied to the workplace, living above the back shop or workshop in a farm cottage or living close to the busy High Street where casual trade could be pursued. In short, they were scattered in small pockets throughout the densely packed burgh. Figure 16:2 shows a sharpening in their separation around 1871 which is blunted by 1881, only to be honed again, particularly at street level, by 1891. Their lack of segregation meant that there were few areas where they clustered although College Street is an exception in 1861, with 18.2% of this category resident there (LQ 1.5). The increase in segregation plotted for 1871, found them concentrated in parts of the burgh's central area, College Street and parts of the High Street, but under-represented both in Dennystown (LQ 0.3) and in Dumbarton East which included many of the new housing developments at that time (LQ 0.6). The latter was not an entirely greenfield site when the Leven and Clyde Street developments were laid out. This may explain the slightly higher Location Quotient recorded for this district. Dennystown as described earlier, was built on a vacant site on the west bank of the river and was very much the factory workers preserve.

By 1880s intense overcrowding had facilitated a degree of desegregation of the 'labourer' group, but again further housing developments in the east of the town allowed 'higher factory' workers to filter once again into this new housing stock hence promoting further separation from the 'labourers' whose stronghold remained in the old core.

As the indices in figure 16:2 show, the development of differentiation along status lines was a gradual, if uneven, process. Severe overcrowding with its necessary concommitants of lodging and the 'making down'

of properties, along with the large numbers of skilled or 'higher factory' workers resident in the burgh, tended to partially defuse this development. In the High Street the undifferentiated nature of status groups, at ED level, was at its most obvious. Intensely overcrowded, it contained large numbers of 'higher factory', 'lower factory' and 'labourer' status workers in close proximity, up to and including 1891. Figure 16:5 below, shows the Location Quotients for four High Street EDs which changed little in areal extent from 1871 to 1891. The slow, but decreasing representation of 'higher factory' workers was compensated for by a slow, but increasing representation of 'labourers'. The 1871 to 1881 decade had shown an increase in the representation of 'lower factory' workers at the expense of 'labourers' due mainly to the influx of 'lower factory' workers which occurred over that period. Over the thirty years covered here in detail, the filtering, which the Dennys as builders and instigators of housing developments had hoped for, did not take place at a rate which contemporaries would have recognized.

Burgeoning population growth rapidly outstripped housebuilding and left the High Street not as the preserve of the lowest status groups, but with many industrial workers in residence.

Figure 16:5 - Location Quotients for High Street EDs 1871-1891: Professional, Managerial and Clerical; Higher Factory; and Labourer Status Groups

	1871				1881				1891			
ED	3	4	5	6	3	4	5	6	3	4	5	6
I & II	0.6	0.8	0.7	-	0.4	2.6	0.9	-	-	1.2	-	0.7
IV	0.9	1.1	1.3	1.3	0.9	0.7	1.0	1.3	1.3	0.7	0.6	1.2
VI	1.5	0.6	0.4	1.1	1.1	1.3	1.1	0.4	1.4	0.8	0.9	0.7
VII	0.3	2.4	1.4	1.0	0.8	0.9	1.3	0.5	0.9	1.5	2.6	0.4

To emphasize the cosmopolitan nature of the High Street EDS, and indeed 'closes', one address was chosen, at random, from each of the four main High Street EDs for 1871 and 1881 to demonstrate individual, social and ethnic persistence and change.

The addresses are given in the table below, figure 16:6 which illustrates the diversity and change both spatially and temporarily.

Figure 16:6 - Persistence and Change at four High Street Addresses 1871-1881
(A) = 1871; (B) = 1881

ADDRESS	46		57 & 59		136		157	
DATE	A	B	A	B	A	B	A	B
Number of people	101	160	42	49	24	10	4	4
Number of crgs	19	27	11	11	3	2	4	4
Number of Lodgers	17	23	8	5	2	-	-	-
Number of Servants	2	1	1	1	1	-	2	2
Social Status of Male Household Heads (Scheme B) 1	1	-	-	-	-	-	3	1
2	1	-	-	-	-	-	-	-
3	2	1	-	2	-		1	2
4	8	9	5	3	1	1	-	1
5	1	3	-	1	-	-	-	-
6	-	6	-	-	-	-	-	-
7	1	5	-	1	2	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
Definite Persistence of crgs		$\frac{2}{19}$		Nil		Nil		$\frac{1}{4}$

This very small additional sample can provide no statistical inferences, but it does illustrate the chaotic nature of the core area. Forty-six High Street shows definite signs of decline in social status with an increase in population. Fifty-seven and Fifty-nine High Street (which appears only as 59 High Street in the 1881 returns, highlighting the problem of accurate address information) shows little change in population total, but a diversification of household heads' status and occupational groupings. From a 'close' which housed mainly 'higher factory' male household heads to one which included small 'traders' an 'artizan' and 'non-factory labourers'. One hundred and thirty-six High Street exhibits a marked decline in population with a net loss of one crg, two lodgers and one servant. The absence of children in one 1881 crg helps to accentuate the drop. One hundred and fifty-seven High Street was the highest status address of the four, but it too shows a decline in status over the ten year period, although the number of crgs, people and servants, if not individuals, remained steady.

Persistence rates were very low as would be expected of an area where much of the population was housed in sub-standard backland cellars or made down apartments. One family in four resident at the highest status address (157 High Street) in 1871 could be traced to the same address ten years later. No definite links could be established at either 57/59 or 136 High Street over the decade, while there was a definite persistence of only two out of nineteen crgs at number 46 High Street. The heads of household here being a rope spinner and a shoemaker. No factory workers could be positively identified as 'stayers'.

Thus the only semblance of a pattern to emerge from the four sample addresses is one of relative and marginal

decline in status combined with low rates of persistence. Each address could boast at least one resident domestic servant in 1871 and three out of the four had at least one servant there in 1881. Lodging being common, at both dates, at the populous addresses.

There is a danger of reading too much into this data covering only four addresses, although it does reinforce the idea of a slow, but uneven, decline brought out in the main sample. It should not be inferred, for example, that addresses west of Dumbarton Cross (the junction of College and Quay Streets with the High Street) addresses 136 and 157 High Street here, tended to have fewer people and a higher overall social status. A doctor lived at 51 and 53 High Street for example, 'next door' to 57 and 59. The south west sector of the High Street as described earlier, was very densely populated. Numbers 144 High Street, west of the cross had 150 people and 30 crgs recorded there in 1871, and the Lennox Herald regularly reported cases of overcrowding from addresses throughout the High Street.

It was impossible even at single address scale to differentiate between 'frontage' crgs and backland crgs. 'Back houses' were referred to at one address in 1871, but there was little difference in the status of those living in the 'back houses' and those without this designation. One is forced to conclude that differentiation was at a scale, or of a type, which could not be observed through using the cebs at any one date. Long term and overall change (in this case in status decline) was inferred by an ED scale analysis of the data.

The cellular nature of the Vale of Leven's urban morphology, along with the large number of 'lower factory' workers, makes segregation within the working classes, at ED level, very difficult to recognize. Dumbarton

as a more unified entity than the straggling villages of the Vale, exhibited a clearer separation of 'higher' from 'lower' factory workers at an observable scale over the period; but other factors besides social status such as occupational and ethnic groupings were also extremely important differentiating elements. Their role is considered next.

INDUSTRIAL AND OCCUPATIONAL DIFFERENTIATION

As demonstrated in Chapter 8, the Vale of Leven was completely dependent on its printworks with the result that there were no substantial occupational alternatives for the workforce. This makes any attempt to define the extent of industrial segregation [1] a fatuous exercise.

Unfortunately there is no way of knowing where each individual firm's workforce was located. The cebs provide a record of a persons occupation not his or her place of work. The latter detail would have allowed the investigation of locational differentiation on the basis of workplace. As suggested in the previous chapter, the journey to work even from one end of this urban agglomeration to the other was not prohibitive; but if the availability of housing made even a half hour or forty minute walk unnecessary, and if the hiring of labour was done in an erratic and short term way, then it may have been advantageous to locate close to the place of employment. Certainly all villages contained their mix of 'higher' and 'lower' factory workers, producing relatively low levels of segregation (see figure 16:1) when the Vale is considered as a whole. And so, at this scale, although there is no conclusive proof, the place of work may have been a more important consideration than social status in residential location. The only other piece of evidence which can be brought to bear here concerns those in the 'trade' status category, made up mainly of small scale merchants and shop keepers. Most in

this group lived on the premises and exhibited higher levels of segregation than either the 'higher' or 'lower' factory workers. This may have been a product of a perceived higher status, but was more likely to be occupational in character as they were principally located in the major trading streets of each village.

While unequivocably, differentiation by status was more advanced at an observable scale in Dumbarton, industrial segregation was not unimportant. Dumbarton's major employer, shipbuilding, can be compared to the next major category, foundry work, in this respect. Figure 16:7 below shows indices of dissimilarity at ED level for the census years 1861 to 1891 inclusive.

Figure 16:7 - Indices of Dissimilarity: Shipyard and Foundry Workers

1861	1871	1881	1891
23.45	51.5	42.1	47.1

The most unusual feature of figure 16:6 above, is the sharp increase in dissimilarity evident between 1861 and 1871, which was largely due to changes in Dennystown. As figure 16:8 below shows the change was largely as a result of a gross over-representation of foundry-workers in that area by 1871.

Figure 16:8 - Location Quotients: Shipyard, Foundry, 'Higher Factory', 'Lower Factory' and 'Labourer' occupational and status groups 1861-1871

		SHIPYARD	FOUNDRY	'HIGHER' FACTORY	'LOWER' FACTORY	'LABOURER'
1861	Dennystown	0.7	1.3	1.2	0.5	1.2
	Dumbarton East 2	1.7	0.7	1.1	1.0	0.5
1871	Dennystown	0.7	2.9	0.9	2.1	0.3
	Dumbarton East 3	1.2	0.4	1.3	0.4	0.6

Both the LQ for 'foundry' workers and 'lower' factory workers increased substantially and it is likely that many of the in-coming foundry workers were of 'lower factory' status too.

Meanwhile skilled shipyard workers, under-represented here, were more prevalent in the east end of the burgh. When Denny Brothers moved their operations to the Leven shipyard from Woodyard on the west bank, they built new houses and encouraged others to build in the 'Newtown' near this works. It was never a closed shipyard colony, shipyard and skilled workers were over-represented there, but not highly concentrated, such was their numeric presence throughout the burgh.

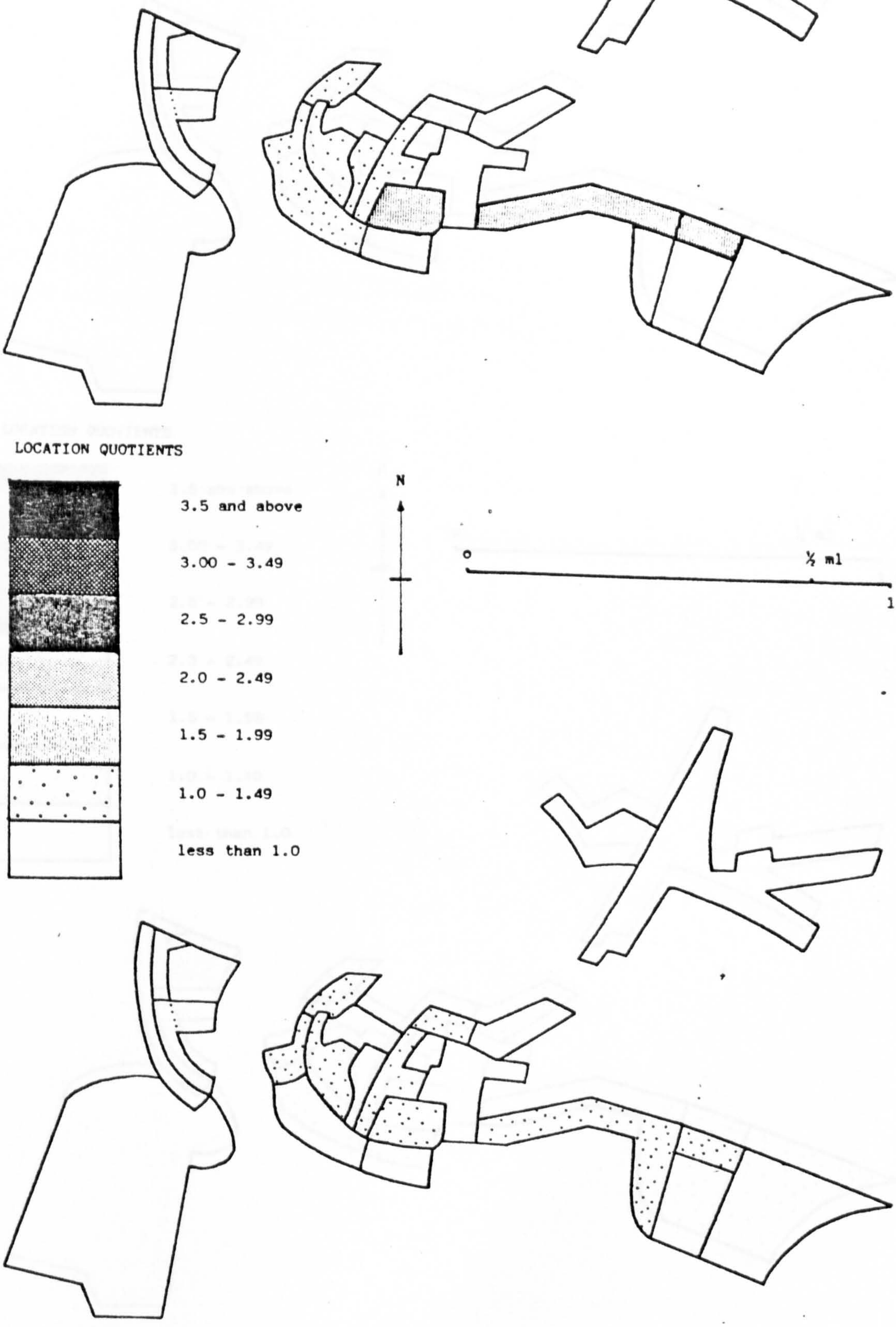
Osborne (1980) in listing the biggest occupational groups in Dennystown attributes the shift away from 'labourers, joiners, ships carpenters, blacksmiths and rivetters' to the 1871 situation where 'iron moulders, forge labourers, labourers ships carpenters, general labourers and blacksmiths' (P5) predominated, to the growing emphasis placed on iron shipbuilding and steam propulsion, but this is only partly the case, for the overall proportion of iron and foundry workers in the town only grew by around 1.5% to 2% over the 1861 to 1871 decade while the proportion of shipyard and machinery workers grew from 33% to 41% of the employed male workforce.

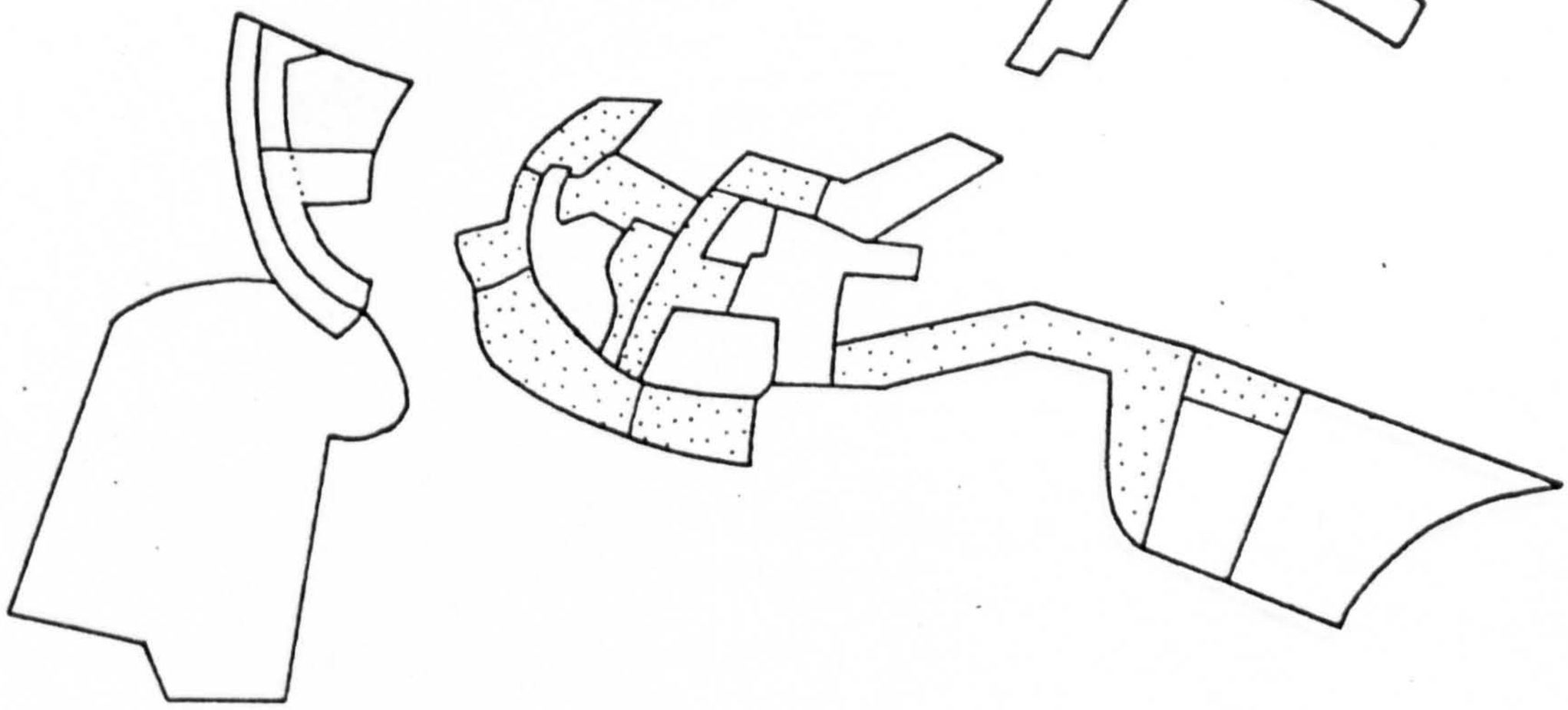
The Dennystown development may have declined in status, but not all of the foundry workers living there were unskilled, the LQs tend to show a greater concentration of foundry workers than unskilled workers, but it was more so than shipbuilding, an unskilled industry with skilled operatives having poorer rates of pay than those in the shipyards (Campbell 1980).

The importance of locating near the place of work, even in a town as small as Dumbarton where walking distances were not prohibitive, must be acknowledged. It may indeed be true that the skilled foundry worker was of a lower status than elite in the shipyards, and so the location of foundry workers has a status dimension, but

among Dumbarton's working classes segregation by status was an increasing, but not all embracing, facet of residential location. The most obvious mix of status groups occurring in the High Street as described earlier in this chapter. Dennystown in the shadow of its forge, along with Westbridgend and adjoining areas contained 37% of all foundry workers in 1861, 65% in 1871, 52% in 1881 and 53% in 1891 according to the sample. These concentrations along with the high Location Quotients recorded and the high levels of dissimilarity when compared to shipyard workers emphasize that for foundry workers industrial proximity rather than social segregation was of paramount importance. See figures 16:8 and 16:9.

Figure 16:8 - Location Quotients
Shipyard Workers Dumbarton
1861 (top), 1871 (bottom),
1881 (overleaf top),
1891 (overleaf bottom).





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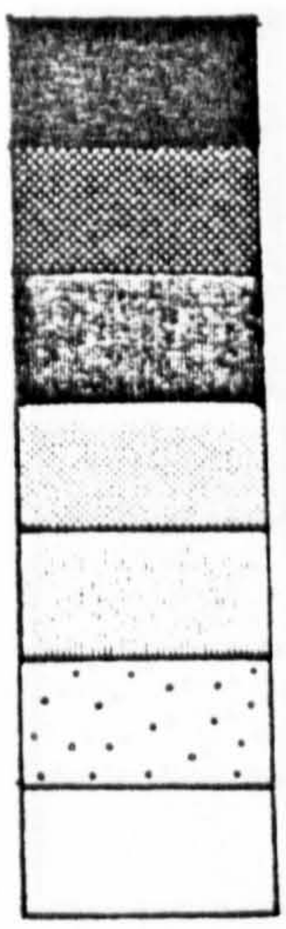

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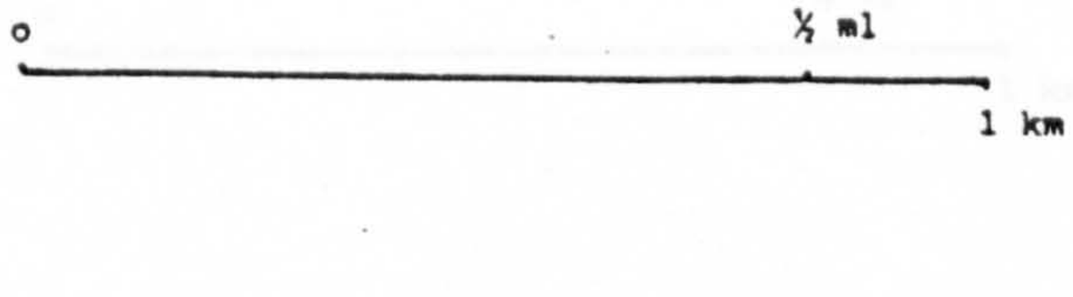


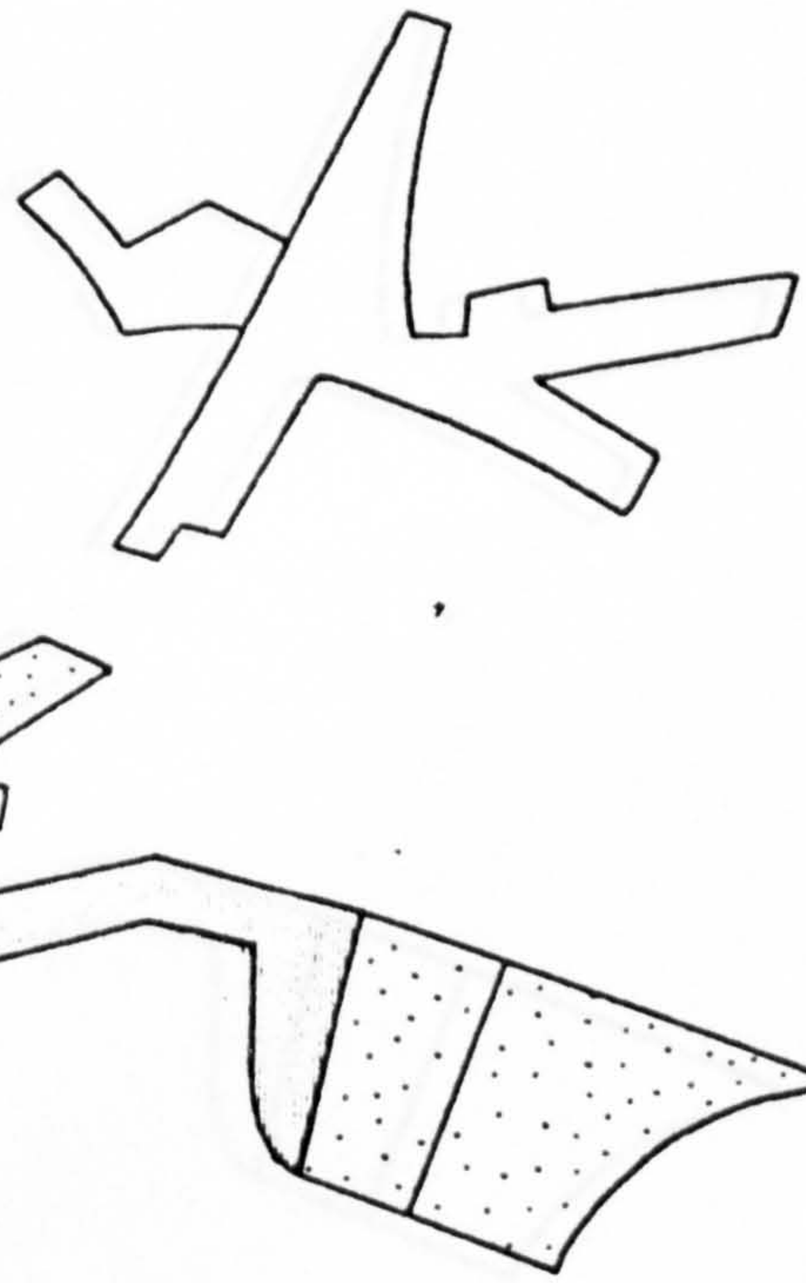
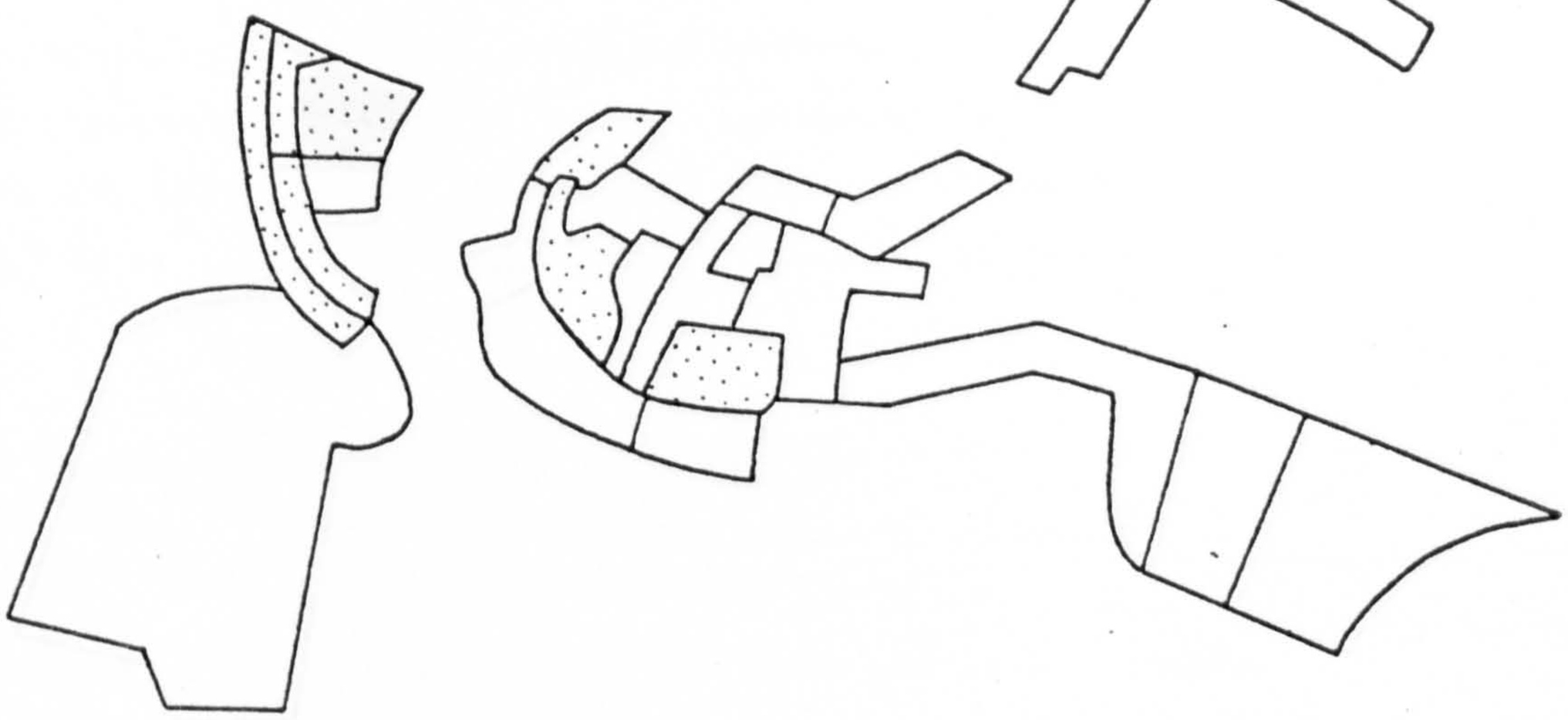


Figure 16:10: Location Quotients
Iron & Steel Workers Dumbarton
1861 (top), 1871 (bottom)
1881 (overleaf top),
1891 (overleaf bottom).



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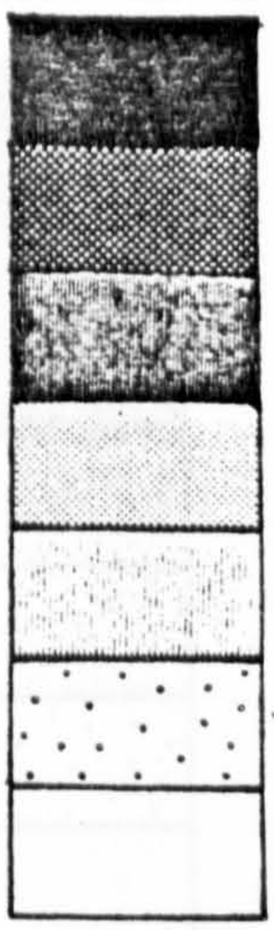

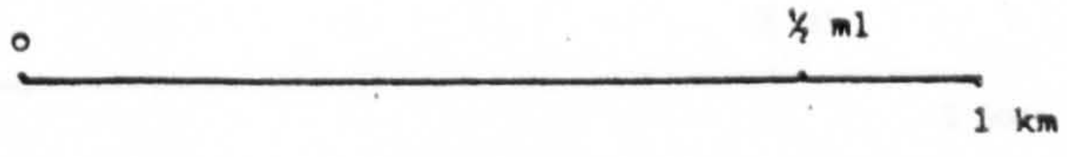

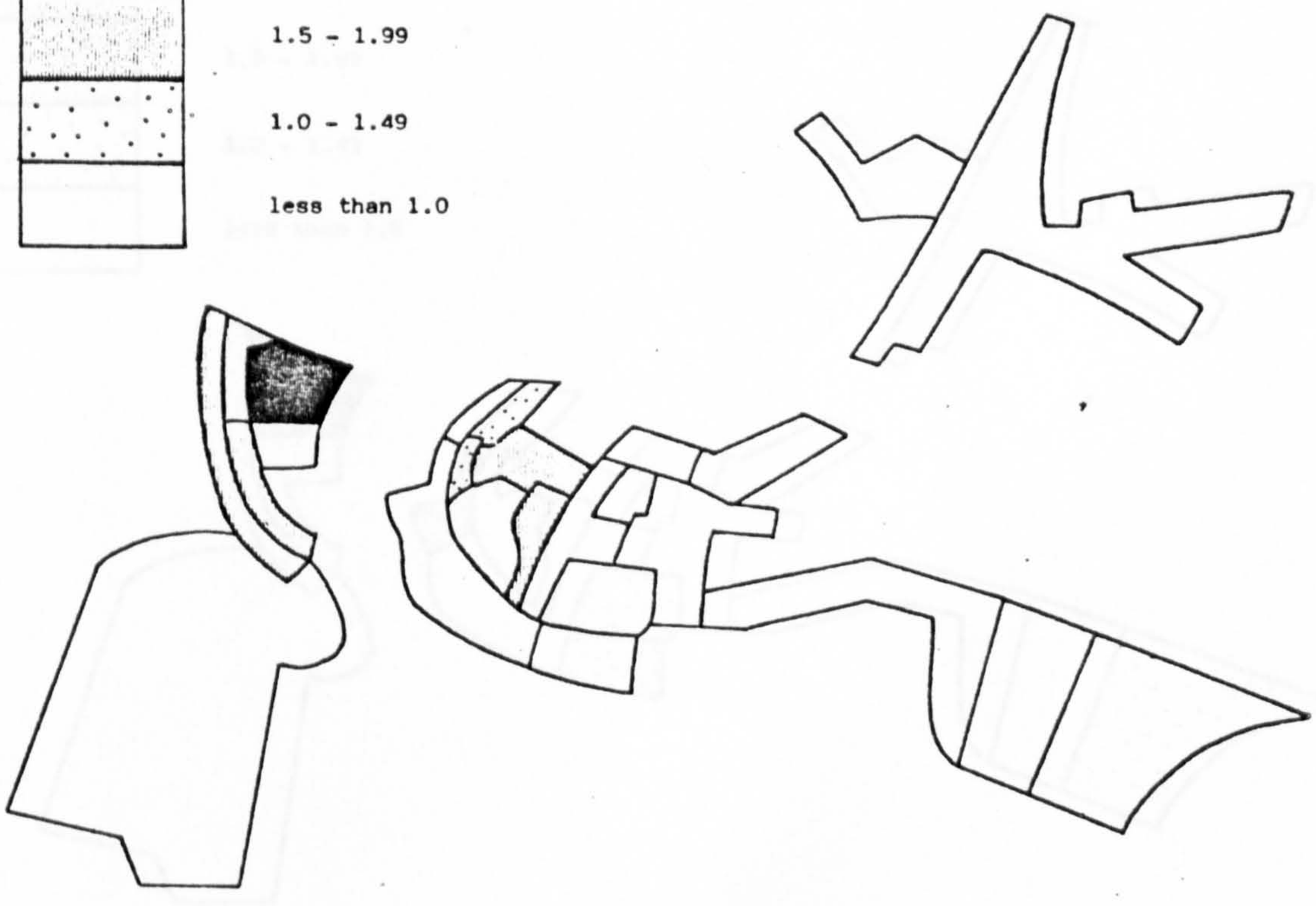

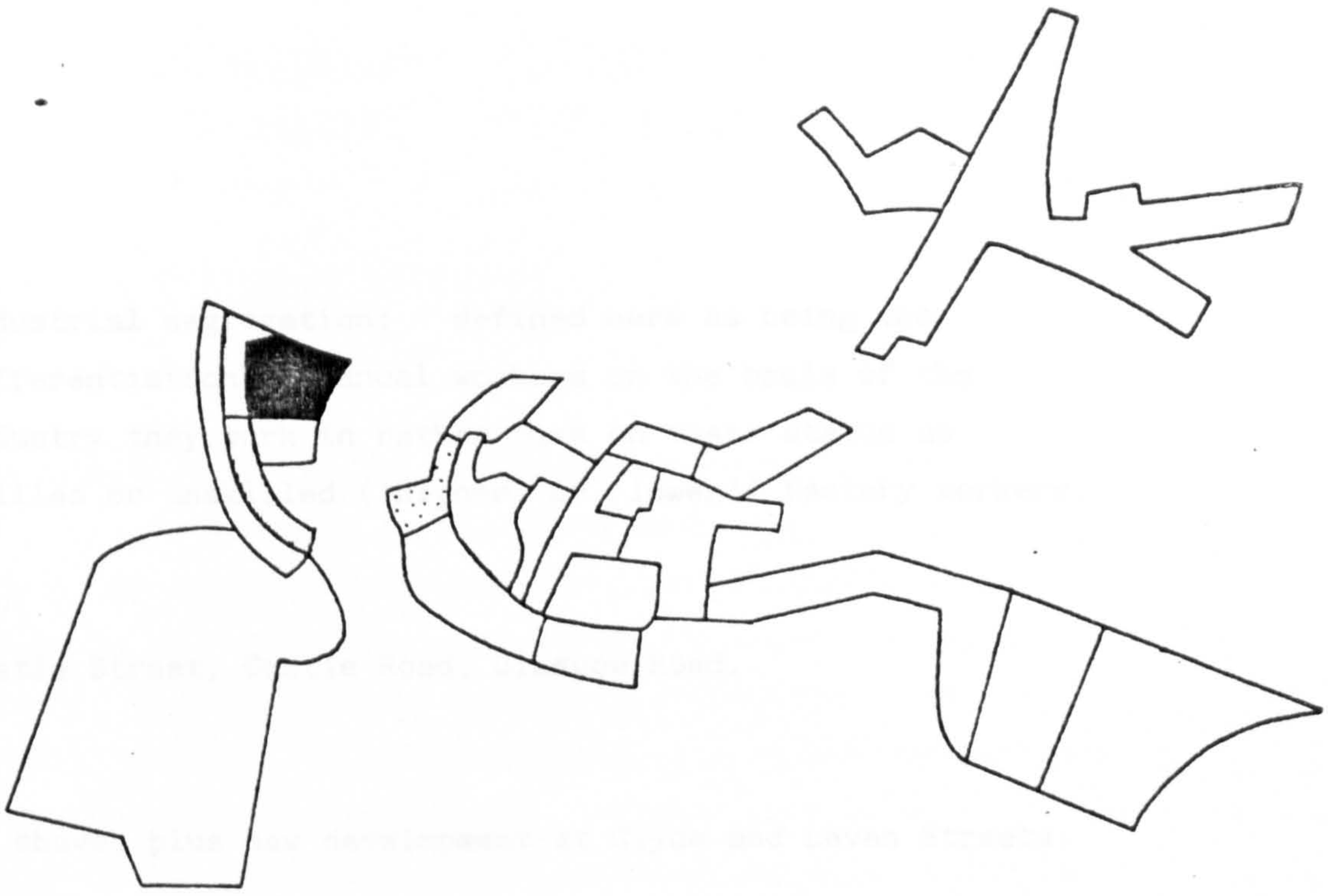

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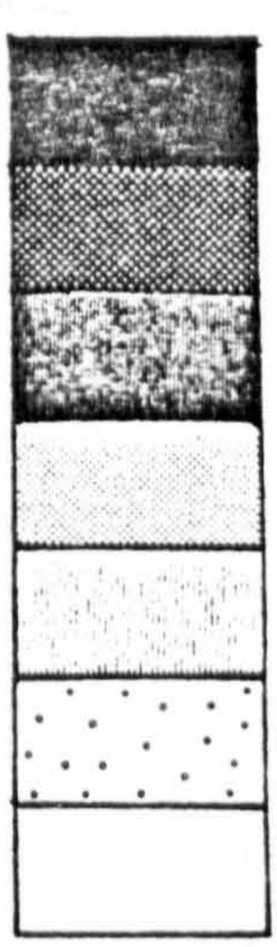

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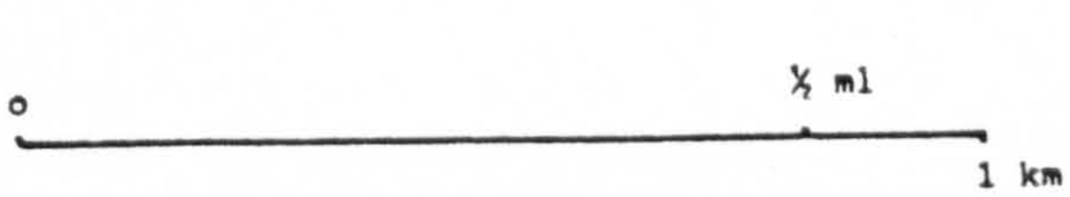
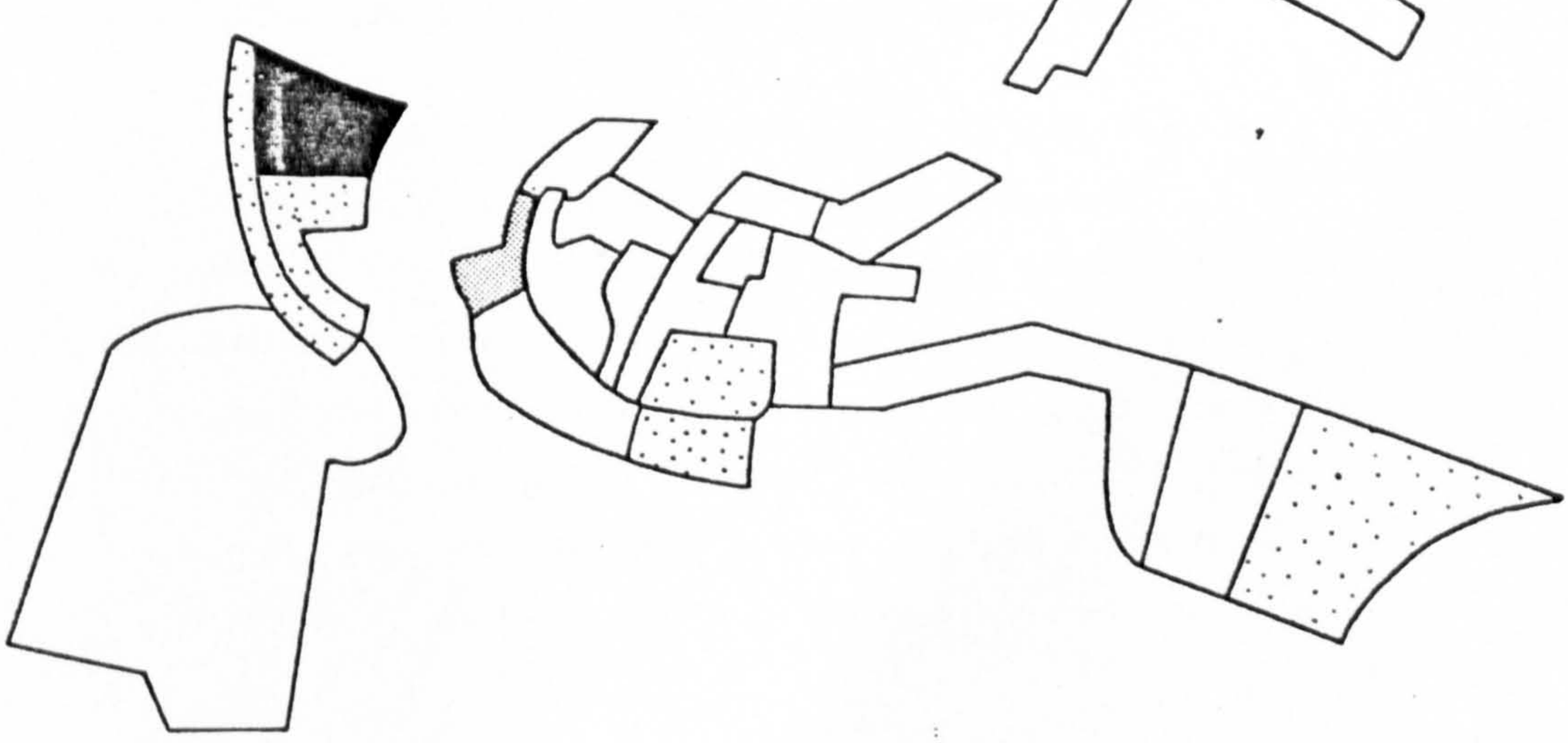




NOTES

1. Industrial segregation: defined here as being the differentiation of manual workers on the basis of the industry they work in rather than on their status as skilled or unskilled ('higher' or 'lower') factory workers.

2. Castle Street, Castle Road, Glasgow Road.

3. As above, plus new development at Clyde and Leven Streets.

CHAPTER 17: RESIDENTIAL; DIFFERENTIATION; ETHNIC PATTERNING, LODGING & SERVANT KEEPING

THE IRISH IN THE VALE OF LEVEN

The Irish presence in the Vale of Leven was much smaller than in Dumbarton just a few miles to the south, but like Dumbarton the Irish tended to congregate in specific parts of the townscape. At an ED scale the Irish were most certainly segregated by 1891 but an identifiable and steady growth in segregation, and dissimilarity of location with respect to the 'nearby Scots', was not wholly apparent over the period. Higher indices of segregation and dissimilarity being recorded for Irish males in 1861 and 1891 than in the intervening census years. See figure 17:1 below:

Figure 17:1 - Indices of Irish Segregation and Dissimilarity of Location compared to 'nearby Scots' in the Vale of Leven 1861-1891, by Enumeration District

	1861	1871	1881	1891
Is	40.3	28.0	35.2	37.0
Id	36.8	28.6	35.7	42.4

As with so much statistical data presented here the figures for 1871 stand out starkly as being indicative of an important re-alignment resulting from industrial difficulties encountered in the previous decade. That there was an areal dimension to this phenomenon is clear from figure 17:1 above, and from the decrease in areal segregation among 'higher' and 'lower' factory workers. Does this areal change have social implications as suggested in the previous chapter, or was the development of

segregation a less important process than Geographers have tended to imply by their study of it? If the generally accepted view is correct; that society grew more fragmented as the century wore on, then could the areal fluctuations experienced in the Vale have had any social root or was social fragmentation continuing to develop without an observable commensurate change taking place on the ground? It is quite possible that social fragmentation may have been expressed more strongly at work, institutionally, and in every day contacts, than was manifested geographically. Yet, if desegregation as a consequence of the out-migration of the ill established, and the availability of better housing for those of lower status (which included the majority of Irishmen) was the result of the industry's decline, then stability saw the growth in segregation once again. In short, this differentiation may have been the product of the industrial situation and the housing market, and as such would have been more economic in origin than social. But the consequences were social, and were expressed in growing differentiation. However, as to the initial forces which drove this process, there is little evidence on which to base any claims. In other words, was the heightening of areal differentiation in the Vale a product of social fragmentation or vice-versa?

It has been argued, most notably by Ward (1975) that segregation, being perceived and written about more by the professional classes than by anyone else, would tend to be exaggerated as such people, even in mid 19th century Britain, lived lives that were set apart, in residential location, in social contacts and even in their daily timetables, from the mass of the working classes. Any concerned observer of this scene in the Vale of Leven from his perch in a detached house high above the village could be forgiven for seeing only the growing separation of the middle from the working classes. For as figure 16:1 shows, while differentiation within the working classes declined after 1861, and probably as a consequence so too did the separation of the Irish and 'nearby Scots' (see figure 17:1), the broader process of separation, which saw the middle classes segregate themselves from

the working classes, continued unabated.

As the separation of groups within the working classes began to assert itself again after 1871, so this middle class isolation remained unaffected in its steady progression. There can be little doubt that the middle classes generally sought separation. The role of locational differentiation within the working classes is much more questionable and may have been more economic in origin, as the blurring of fractional differences in status were achieved through the compaction of wage differentials. Pressure on housing eased and 'lower' and 'higher' factory workers drew closer socially and areally. The fact that the effects of short-term industrial decline had a desegregating effect at this scale on the factory employed working class, while their separation from the middle classes continued to grow is indisputable; its social message is less so, but it does at least emphasise the gulf between the working and middle classes which was unaffected by industrial change. This was the most difficult gap to bridge, so while social mobility within the working classes was possible, it was much more difficult to overcome the barrier between the broad class divisions which characterized late Victorian Society.

The Irish experience here was part of this pattern of desegregation centred on 1871, their maintenance of a higher level of segregation being partly ethnic and partly due to their over-representation among the non-factory labouring group which was always more segregated than both skilled and unskilled in factory work. Overall the high levels of segregation and dissimilarity which the Irish experienced cannot be explained away in terms of social status alone. True, their indices of segregation and dissimilarity paralleled those for the 'higher' and 'lower' factory workers over the period, but their separation was always more distinct. Only the dissimilarity in location of the professional, managerial and clerical group compared to unskilled workers, from 1871 onwards, and the sharp segregation of the professional, managerial and clerical group in 1891, were at higher levels than those for Irish dissimilarity (compared to 'nearby Scots') and segregation.

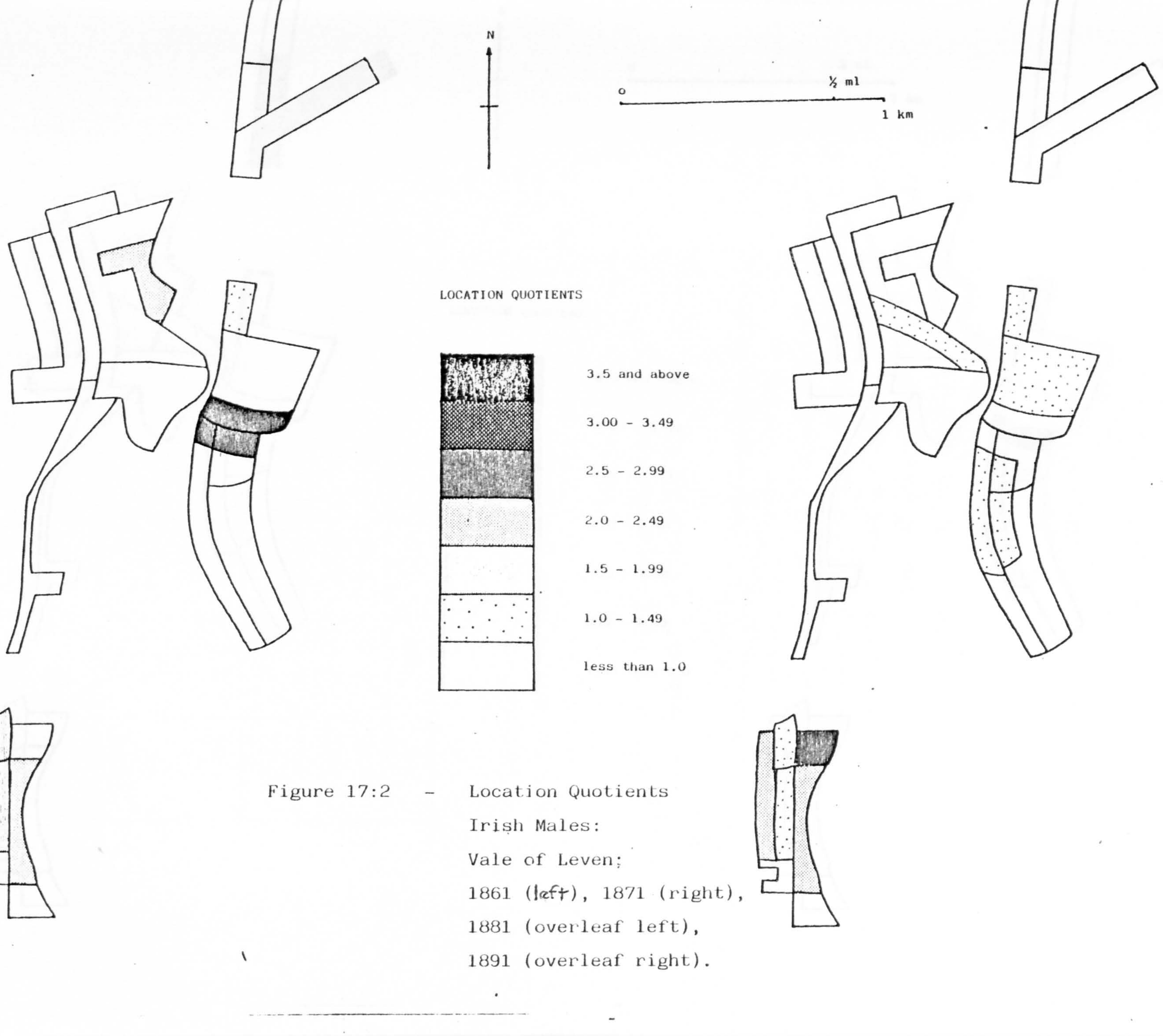
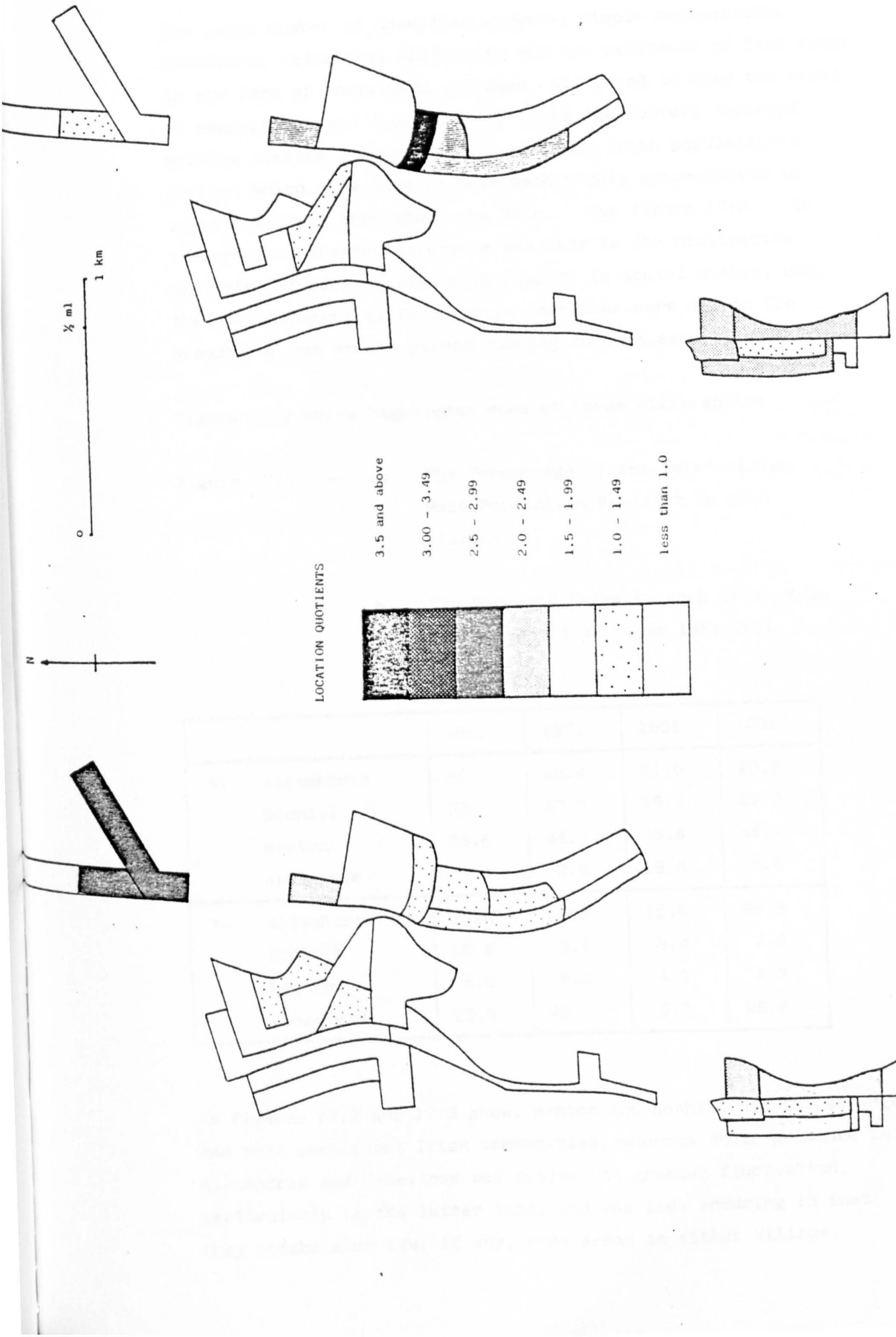


Figure 17:2 - Location Quotients
Irish Males:
Vale of Leven;
1861 (left), 1871 (right),
1881 (overleaf left),
1891 (overleaf right).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LOCATION QUOTIENTS
3.5 and above
3.00 - 3.49
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2.0 - 2.49
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1.0 - 1.49
less than 1.0

The large number of unskilled workers, simple occupational structure, industrial uniformity and the existence of four focii in the form of individual villages, all acted to keep the level of segregation and dissimilarity among the factory employed working classes low contrasting with the Irish population's indices which show them to have been highly concentrated in certain pockets throughout the Vale. See figure 17:2. In the previous chapter reference was made to the distinctive character of each village with respect to social status, but the most apparent differences in character were due to the breadth of the ethnic strand running through each.

Figure 17:3 below highlights some of these differences:

Figure 17:3 - a. The Percentage of the Vale's Irish Male Population Resident in each village

b. The Ratio of Males to each Irish Male in the Vale's villages 1861-1891

		1861	1871	1881	1891
a.	Alexandria	30	26.4	21.5	20.6
	Bonhill	30	27.3	26.4	28.7
	Renton	35.6	43.3	33.4	44.7
	Jamestown	4.4	2.8	18.8	5.6
b.	Alexandria	23.6	16.8	15.8	25.3
	Bonhill	10.6	9.1	8.4	7.6
	Renton	5.6	6.2	4.9	8.9
	Jamestown	23.5	46	5.2	26.8

As figures 17:2 and 17:3 show, Renton and Bonhill had the strongest and most persistent Irish communities, whereas their presence in Alexandria and Jamestown was subject to greater fluctuation, particularly in the latter case, and was less enduring in that they established few, if any, core areas in either village.

What the data in figure 17:3 shows is that while Alexandria had a sizeable but declining share of the Irish population it was always diluted by the large numbers of 'nearby Scots' and 'local' born populations. Only in 1861, when half of the Irish population in Alexandria (14.4% of the Vale's total Irish population) lived in one ED were there any significant concentrations of this population.

Jamestown, recently developed in 1861, was host to very few of the Vale's Irish population except around 1881 when a fresh surge of Irish in-migration appears to have targeted the village. By 1891, as the Irish population both proportionally and numerically had declined, they had retreated to their core areas in Bonhill and Renton leaving Jamestown with much the same ethnic profile as it had in 1861 and 1871 with small numbers of Irishmen greatly out-numbered by Scots.

Renton and Bonhill were the only villages which the Irish inhabited in heavy concentrations throughout the period, their presence centring on the core of each village. If this was more true for Bonhill than Renton it was because it had, prior to the 1891 count, a lower proportion of Irish to Scots than Renton. They were centred on Burn Street and adjoining Main Street (see figure 17:2), whereas in Renton, with an Irish population of similar proportions to Dumbarton, they were really only excluded from the newer developments to the south of the village built between 1881 and 1891 (Docherty 1981).

These Irish concentrations had much in common. First, they were persistent in specific areas of the Vale, and indeed to each village over the thirty year period. Secondly, they were aperipheral; in the older and poorer parts of each village. Thirdly, Renton as a whole and Burn Street in Bonhill gained a reputation for high death rates, poor health and 'fever' cases. The sewage laden stream which gave Burn Street its name, ran down the middle of the street separating the houses on the north side of the street from those of the south side, and was targeted as

an obvious source of disease (D H 15 January 1862: L H 17 September 1864). Victorian commentators, who often blamed the Irish immigrants for regular outbreaks of infection and disease which swept the inner areas of Britain's towns and cities would have found ample support for their opinions here (see Chapter three in Dennis 1984). The common experience of the Irish, which constituted lowly social status, and a clustering in the congested, dark, poorly ventilated and unhygenic warrens close to the centre of each town, was evident. Conditions perhaps exacerbated by their tendency to want to live close to each other and deliberate disassociation on behalf of their non-Irish 'neighbours'.

The generally low status nature of the villages and the desegregated profile of the working classes at ED level, does indicate that if there were constraints on the Irish then they were of an ethnic and social nature and not merely economic, given their higher levels of separation.

The decision of Irish people to settle in a particular sector of the Vale of Leven may not have been entirely free in the way Pooley (1977) regards the Welsh and Scots communities in 19th century Liverpool. Part of their tendency to cluster was due to local contacts, job opportunities and places to stay, all more likely to be found among their fellow countrymen than among the Scots. To suggest that, given free rein, that is, ease of employment and accommodation, the Irish would have been far less segregated would be to misunderstand the nature of post-famine migration to Scotland, and especially to small towns which may have been distinct from the overall stream arriving at large British ports such as Glasgow or Liverpool. To divert from the mainstream more often required personal contacts between relatives, friends and people from the same home area. This was certainly true of outliers like Dundee where higher representations were from north central Ireland rather than counties closest to Scotland, due to an initial similarity of employment, but perpetuated by just such contacts (Collins 1981). It may have

been less true of Glasgow and Liverpool where many intended their sojourn to be a temporary one before either venturing inland or securing a passage to America.

The Irish in the Vale of Leven were constrained by low status and relative inability to compete in the jobs or housing market but, like their countrymen in Dumbarton, they were of a community, fostered by residential propinquity and the Church, tempered by poverty and discrimination. How this affected the immediately succeeding generation born in Scotland, is impossible to calculate, but as the Irish community got smaller and older, particularly noticeable by 1891, and as the settlements in which they lived began to spread, so their increasing segregation had a residual facet to it. This should not be over-stated for, as described in Chapter 15, by staying in the community many were able to enhance their status and by so doing they freed themselves from perceived residential constraints. The evidence shows that they failed to desegregate accordingly, thereby confirming the existence of communities rather than ghettos.

THE IRISH IN DUMBARTON

In Dumbarton the contrasts between the locations of the Irish and 'nearby Scots' was somewhat similar in situation to that of the foundry and shipyard workers. With the former clearly concentrated in particular areas of the town and the latter spread more evenly. Whereas the dissimilarity indices of these occupational groups pulsed, probably in reaction to changes in the housing market, a growing dissimilarity to the 'nearby Scots' and an increasing segregation faced the Irish population. Figure 17;4 shows this to have developed throughout the 1861 to 1891 period. This was due to the persistence of the Irish in the centre of the burgh, particularly in College Street and the north side of the High Street to the east of College Street. It was only in 1891 that they had become over-represented in other parts of the High Street notably

in the southern side close to the bridge and in Dennystown. A portent of the latter concentration at ED level was to be had in both the 1871 and 1881 samples at street level where they were found to be over-represented, firstly in Levenhaugh and then in the Henryshott didstricts of Dennystown, see Figure 17:5.

Figure 17:4 - Indices of Irish segregation and Dissimilarity of location, compared to 'nearby Scots' in Dumbarton; 1861-1891 by Enumeration District and Street

	1861		1871		1881		1891	
	ED	ST	ED	ST	ED	ST	ED	ST
Is	21.1	26.0	26.4	35.2	31.4	36.1	38.1	38.9
Id	27.8	29.8	31.5	41.3	37.0	40.9	46.6	48.7

Once again ethnicity and status were inextricably inter-linked. The low status of the Irish has already been described in Chapter 9 and it is no surprise therefore that areas where the Irish presence was concentrated also show up as areas of low status, see figure 17:6. But that is to simplify the picture to an unnecessary degree.

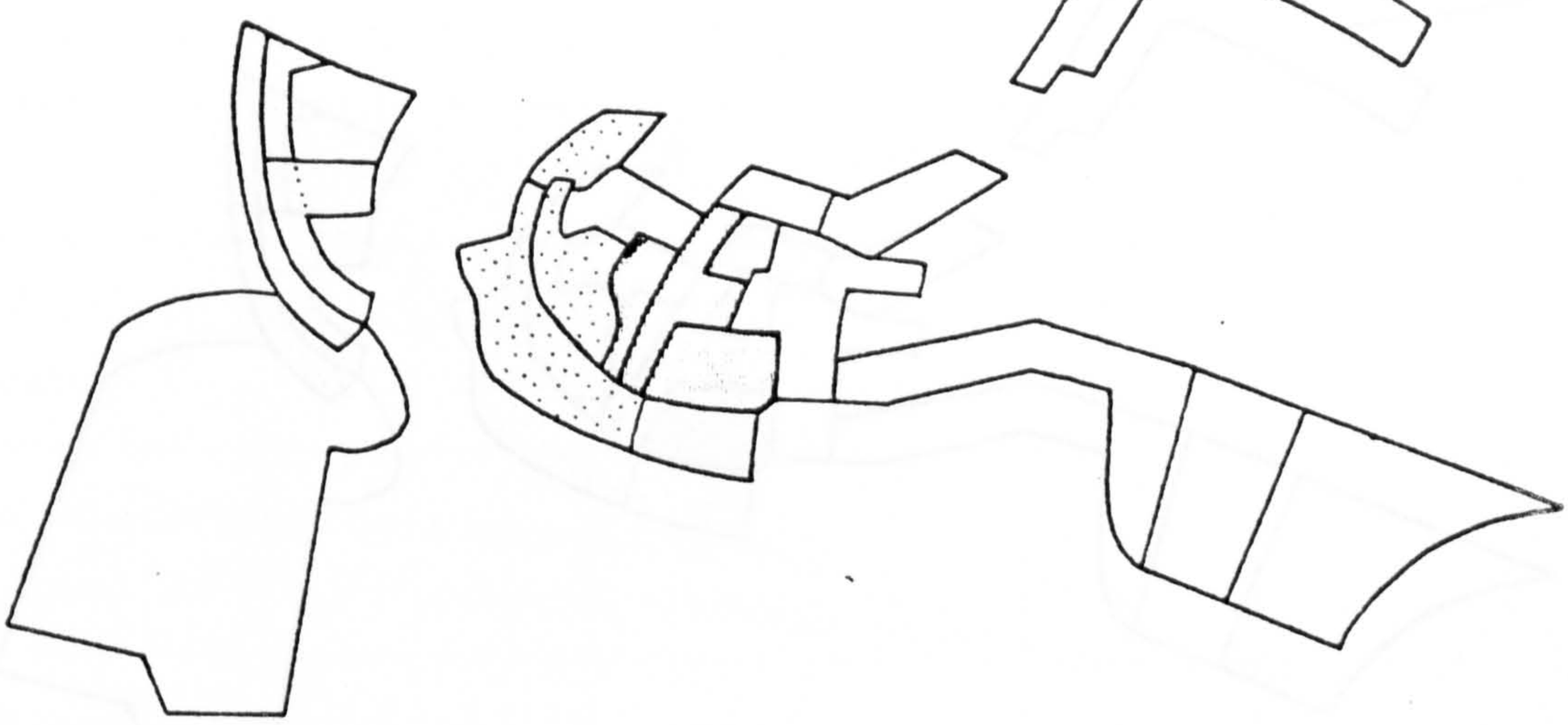
Figure 17:5 - Location Quotients

Irish Males: Dumbarton;

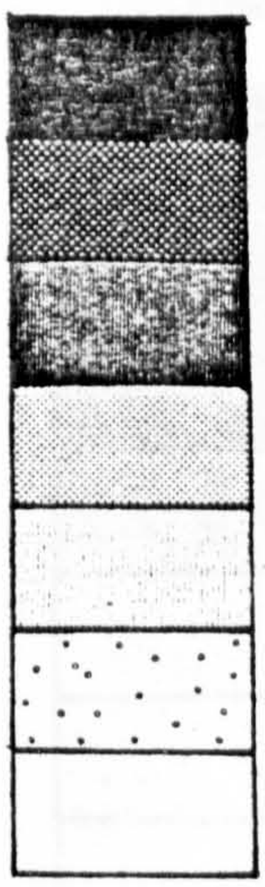
1861 (top), 1871 (bottom),

1881 (overleaf top).

1891 (overleaf bottom).



LOCATION QUOTIENTS



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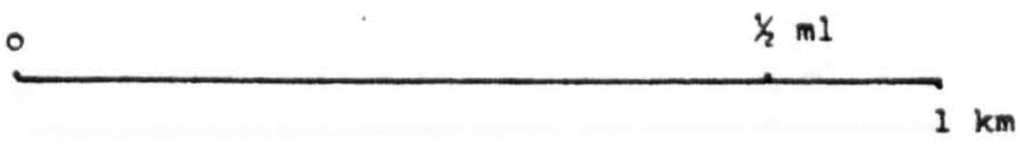

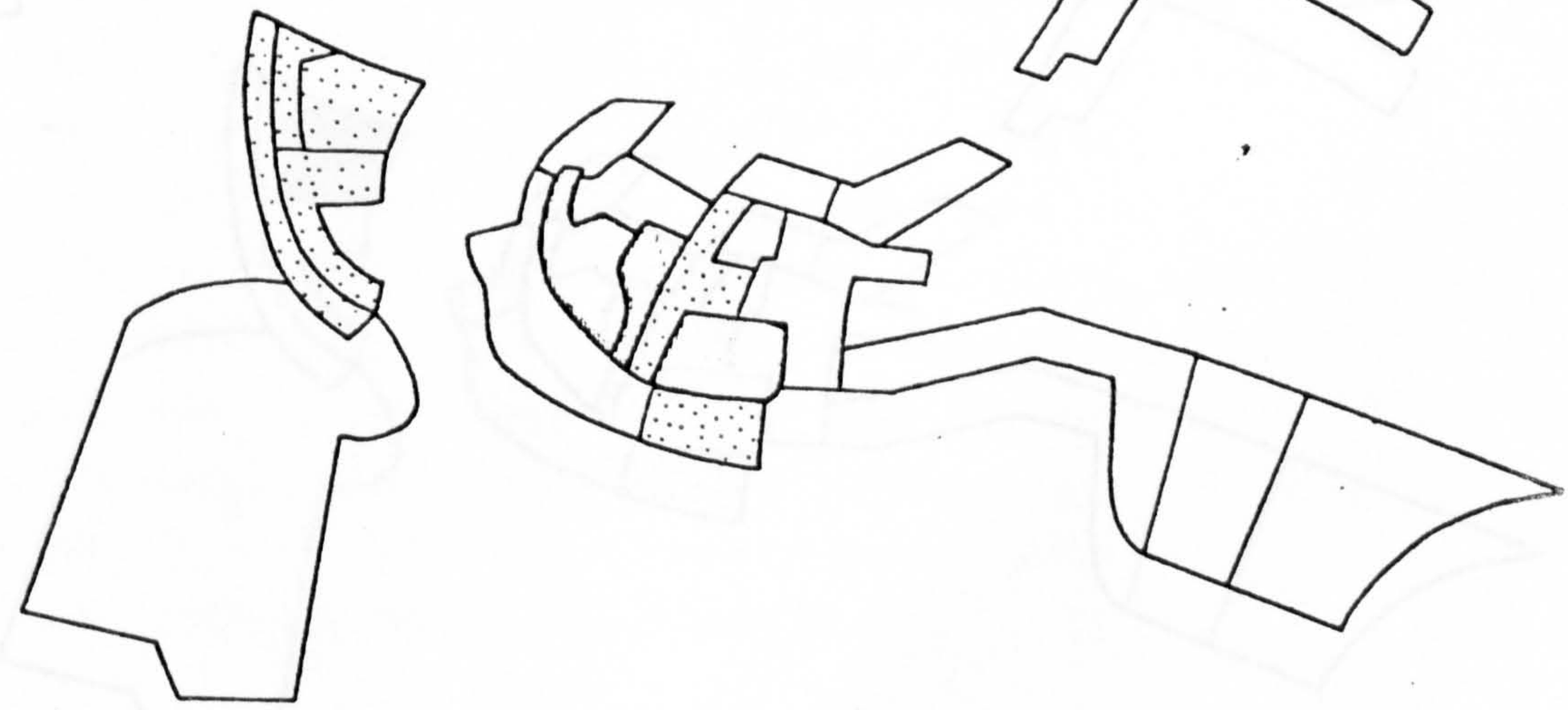

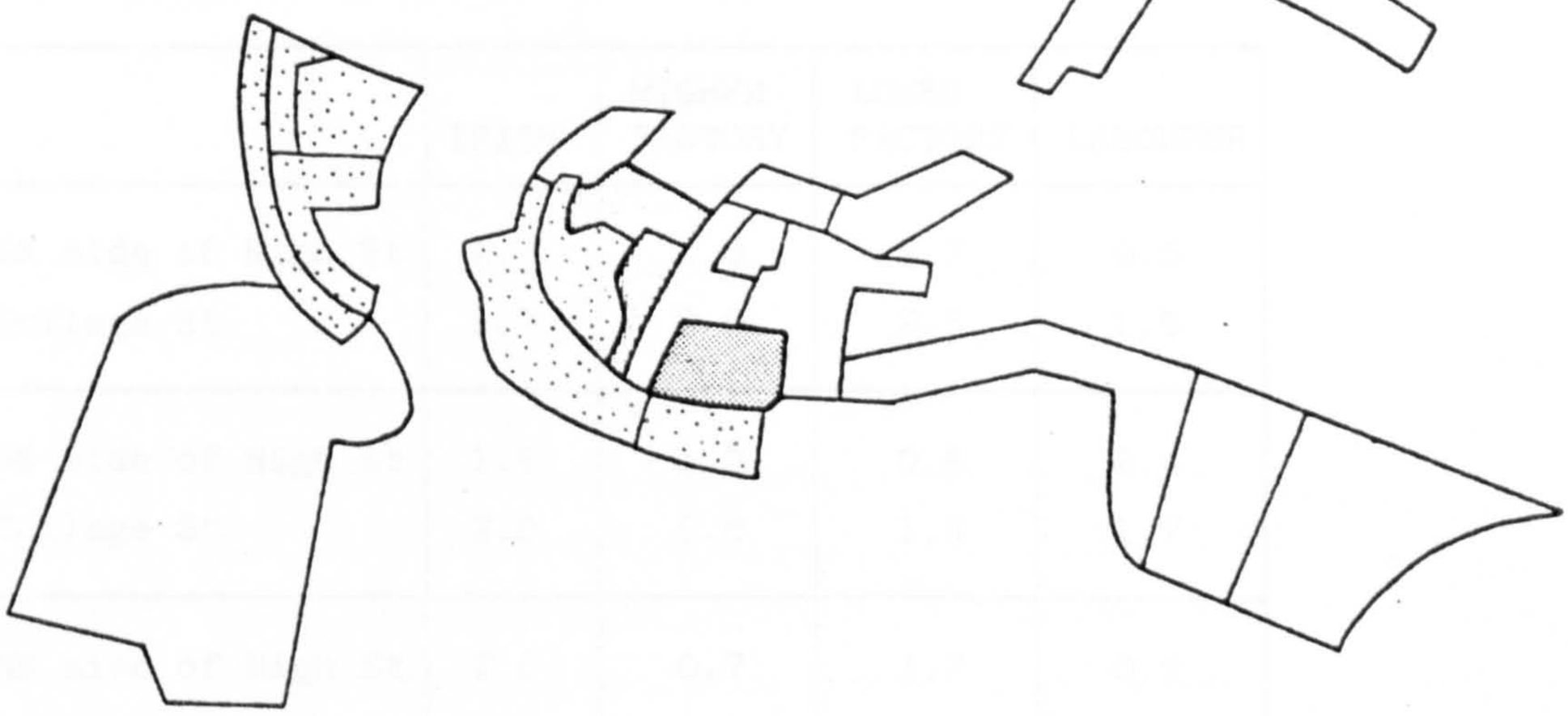

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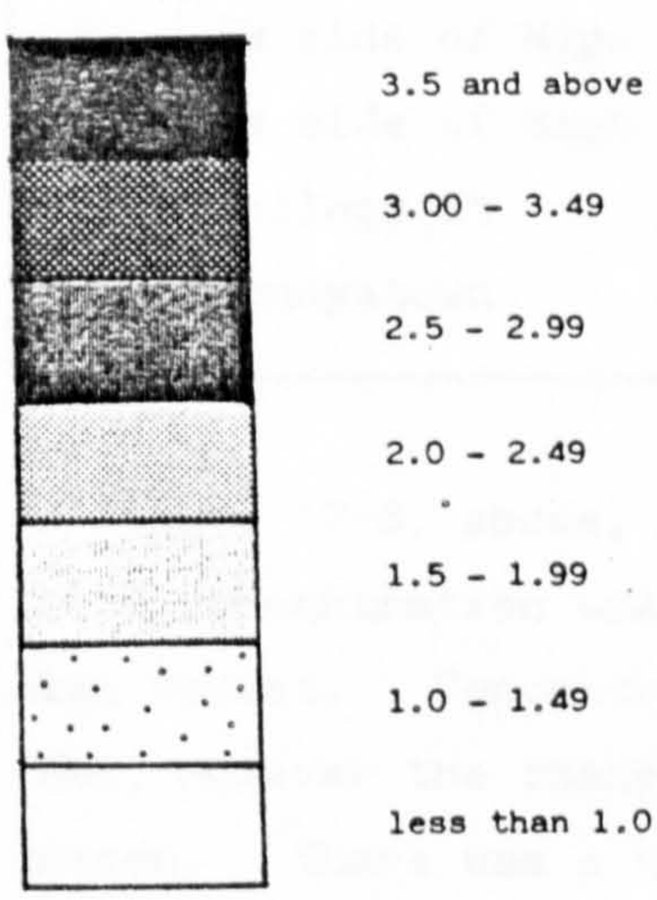
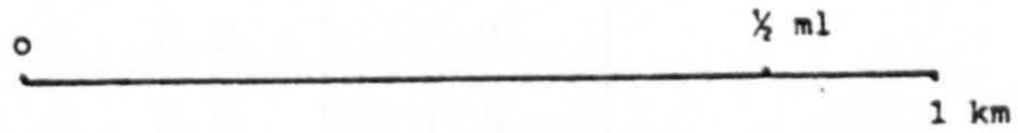




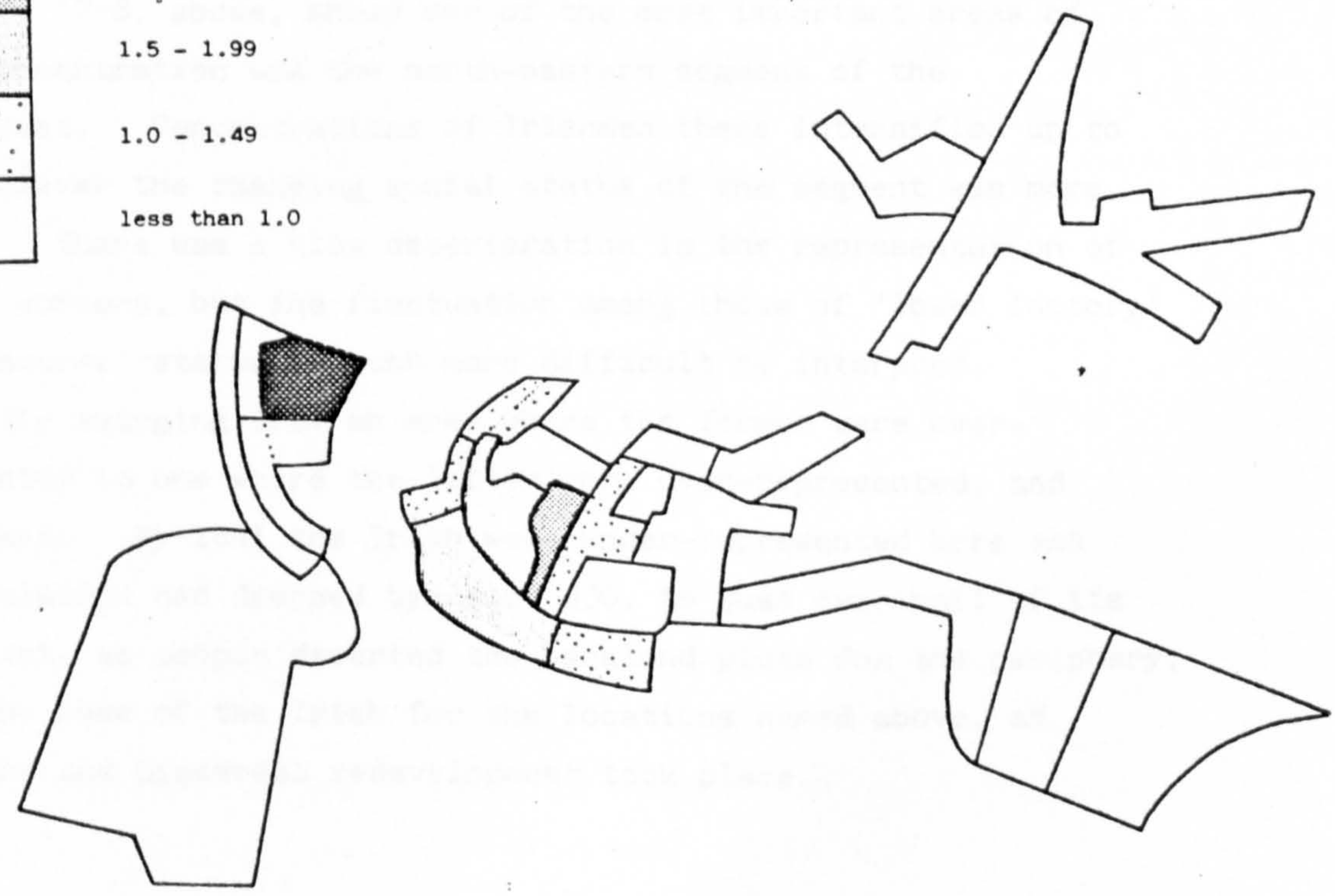


Figure 17:6 - Location Quotients: Irish, 'Higher Factory', 'Lower Factory' and 'Labouring' status groups in areas of Irish concentration

		IRISH	HIGHER FACTORY	LOWER FACTORY	LABOURER
1861	NE side of High St	1.5	1.0	2.7	0.5
	College St	1.7	0.6	2.5	1.5
1871	NE side of High St	1.9	1.0	0.6	2.4
	College St	2.0	0.8	1.4	1.7
1881	NE side of High St	2.0	0.7	1.7	0.9
	College St	1.8	1.1	1.4	1.5
1891	SW side of High St	1.5	0.8	1.3	2.2
	NW side of High St	1.8	0.6	0.9	2.6
	College St	1.9	0.7	2.2	0.9
	Dennystown	3.0	0.6	2.5	1.3

As figure 17:6, above, shows one of the most important areas of Irish concentration was the north-eastern segment of the High Street. Concentrations of Irishmen there intensified up to 1881, however the changing social status of the segment was more uneven. There was a slow deterioration in the representation of skilled workers, but the fluctuation among those of 'lower factory' and 'labourer' status is much more difficult to interpret, apparently swinging from an area where the former were over-represented to one where the latter were over-represented, and back again. By 1891 the Irish were under-represented here and the population had dropped by about 400, to just over half of its 1881 total, as people deserted the backland plots for the periphery, or in the case of the Irish for the locations named above, as clearance and piecemeal redevelopment took place.

There was a movement by the Irish to other, older parts of the town including sections of the High Street which were in turn being deserted for the periphery by their previous inhabitants. The Irish drift within the High Street was noticeably westwards as the eastern end adjacent to Church Street increasingly became associated with finance, administration and ecclesiastical functions.

College Street or the 'Vennel' as it was known, was always regarded as the Irish heartland in Dumbarton, more because of its enduring nature and the size of its Irish population, rather than because of any exclusive or highly concentrated settlement by this ethnic group. The Irish in the 1861 to 1881 period were to be found in almost equal concentrations in the north eastern segment of the High Street, but the population of that area was always lower than that of College Street. These facts, that it was the persistence and number of Irish, not gross over-concentration nor exclusiveness, which made College Street an Irish street, are important. It was true that many Scots born people in the Street were themselves of Irish parentage, and this through time along with the injection of fresh Irish blood, up to the 1870s at least would lend credence to the view that the Street had a very unique identity. Many of those who were born locally and resident there were doubtless of Irish descent, but it is most unlikely, in spite of step-migration, that the majority of 'nearby Scots' resident in the Street were of similar parentage. As figure 17:7 illustrates, they were under-represented but far from absent in College Street.

Figure 17:7 - Location Quotients of the 'nearby Scots' in College Street 1861-1891

1861	1871	1881	1891
0.9	0.4	0.7	0.8

Consequently, what became known as an Irish street was not peopled entirely by the Irish and their offspring. This type of

information is useful in attempting to reconcile the contemporary, and most often qualitative, observations made about Victorian towns with the quantitative evidence used by present day researchers using sources such as cebs, rate books and directories. College Street was at no time an Irish ghetto, neither the varied social status nor the ethnic origins of its inhabitants would allow such a conclusion.

By 1891 there was a definite social dichotomy in the main areas of Irish concentration. Those in the High Street were there in slightly less concentrations and tended towards 'labourer' status, probably as general labourers, street hawkers and pedlars, whereas those in College Street and in the 'new' heavy concentrations in Dennystown were more likely to be 'lower factory' workers. The sudden emergence of an Irish outlier in Dennystown in 1891 illustrates the difficulties of scale engendered by using the ED as the sampling mesh. For at this scale there is little indication of such a development prior to 1891. However street level evidence shows that twenty years earlier the root of an Irish presence in Dennystown had been established, as described earlier in this chapter, at Levenhaugh and Henryshott. So that by 1891 with a continued and vigorous expansion their over-concentration was glaringly obvious at ED level, see figure 17:5.

This was an invasion which contrasted with the location of the skilled lowland Scots who were concentrating ever more strongly in the east end of the town. However as with the 'nearby Scots' in Dennystown, the Irish were not excluded from the east end, merely under-represented. The four areas named for 1891 as having an over-representation of Irish accounted for c 57% of Dumbartons Irish population. The other c 43% being spread, unevenly, over the remaining fourteen EDs. A greater degree of segregation may have been perceived if many of the skilled Irish workers living in the east end were Ulster Protestants, while many of the 'locals' and some of the 'nearby Scots' living with the Irish concentrations in College Street and Dennystown were of Irish Catholic descent. What appears to have been the case is that the latter areas of

Irish location were peopled predominantly by Irish Catholic families rather than Ulster Protestant ones, but beyond the qualitative and oral tradition, the separation of the Irish population along sectarian lines is mere conjecture, although differences in occupational and social status may have facilitated such a segregation.

The prime reason for the growing segregation of the Irish, particularly the marked increase in this feature over the 1881 to 1891 period, was residualisation. The 'invasion' of Dennystown notwithstanding, the skilled and 'nearby Scots' were leaving the centre of Dumbarton at a greater rate than the ageing, unskilled Irish population. The desertion of the core was aided by an ability to buy or rent better accommodation in the newer peripheral areas. Differentiation along social status lines was an important element in the process but not the only one. Reactions to the Irish presence in British or Scottish settlements has already been discussed at length in Chapter 13 and it follows that many of the indigenous population would deliberately avoid areas perceived as being Irish. In Dumbarton the physical growth of the town in the latter half of the 19th century allowed those who could afford to, an opportunity to distance themselves not only from the Irish but from a town centre known to be dirty and disease ridden.

The segregation of the Irish must not be seen merely from its negative side, where Scots react to a static and entrenched Irish population. The Irish had their strongholds but such was their contribution to the peopling of Dumbarton that they were located throughout the burgh. It is worth re-iterating that being under-represented in parts of a town and over-represented among the unskilled classes does not amount to ghetto formation.

Many of the Irish situated in their 'own' areas through choice. Many too learned skilled work or brought skills with them. Their destination upon reaching Dumbarton was likely to be in the areas where the Irish congregated in greatest numbers. Here they would feel safe, establish or widen contacts and look for lodgings if

these were not pre-arranged. They were a part of Dumbarton's industrialisation and in playing a similar role in many other Scots settlements they took full part in the creation of those communities (Collins 1981). Theirs was not an incursion into a settled and sedentary Scotland.

The residualisation of the Irish population, principally in College Street had occupational, social status and life-cycle elements to it, as well as its ethnic strand. The Irish population both declined and aged after 1881, and an ageing population is usually less mobile; the majority were in unskilled occupations, having low social status they had less means to control their residential location than those with superior wealth or status. Ironically between 1881 and 1891 when their segregation increased there was a substantial proportional increase in the 'higher factory' element of the Irish male employed population, probably as suggested in Chapter 13, due in part to the out-migration of unskilled Irish workers. Those who had most to gain by staying behind were those in regular and skilled employment. Life-cycle stage and ethnic cohesiveness would appear to have been more important elements than social status, from the Irish viewpoint, in the 1881 to 1891 decade when a relative improvement in social status was not matched by a commensurate desegregation, but rather the opposite. The very same process which was evident in the Vale of Leven at this time.

LODGING AND SERVANT KEEPING: INTRODUCTION

Lodging and servant keeping are discussed briefly here, being palpable embodiments of the two sides to Victorian society. Potent symbols of Disraeli's 'Two Nations' they represent poverty and wealth respectively. Lodging or, more correctly boarding, was a common 19th century practice born out of necessity in an industrialising age. Large scale migration to towns, low wages and a totally unprepared housing stock, which being unable to keep

pace with demand led to high rents which made boarding a symbiotic relationship. The lodger, often a new arrival, could not find nor afford adequate and separate accommodation. The householder was often very glad of the extra revenue which the hiring of rooms or 'spaces' accrued. This was often done without the consent of the local landlord and led to Police Acts designed to prevent gross overcrowding but which could never really attack the nub of the problem, that of inadequate and insubstantial housing.

Servant keeping, and here only servants in residence are considered in detail, was only possible due to the gulf in affluence between rich and poor in society. The rich, often with large families and large houses, could afford to hire servants on low wages which included as part payment board and lodging. Offering relative security of employment and accommodation may well have been seen by some to offset the higher wages it was possible to achieve in hard, manual, unskilled, factory work.

Lodging and servant keeping are indicators of poverty and wealth and an investigation of the location of these groups in towns contributes to the residential differentiation debate. Fluctuations in lodging may also provide supplementary evidence on industrial prosperity, on migration and on the state of housing, whilst servant keeping may help reveal details of relative affluence through time and space.

LODGING

Tillot (1972) has suggested that, correctly defined, 'lodging' is where a person has a room or set of rooms distinct from the householder and his family and where the lodger fends for himself. Whereas, 'boarding' involved living with the family and sharing a common table. Most writers have tended to use the words synonymously. This can be justified in most 19th century cases as the Victorians themselves used the word 'lodger' to denote 'boarder'.

Importantly, the census enumerators used either word. However where a single enumerator used both words in a single book then as Tillot (1972) states, he was trying to imply something about the different relationship of the lodger and the boarder to their host household. It is regarded as unnecessarily pedantic here, especially in a Scottish tenemental context, to distinguish between lodgers and boarders. In Scotland most people regarded as lodgers were in fact boarders, they were part of a co-residing group which was not of their immediate family. If they were true lodgers inhabiting their own room(s) and fending for themselves, then in Scotland they were more often than not accorded separate status. For it would have been quite logical, given the English oriented instructions, to include every crg after the first named group in a tenement as lodging families. For these reasons, lodging and boarding in a Scottish context are taken to mean much the same thing.

VALE OF LEVEN

As figure 17:8 shows the level of lodging in the population provides a reasonable indicator of economic health, with fewest lodgers per head of population in 1871 and stronger concentrations in 1861 and 1881. Quite clearly, lodging increased during times of economic prosperity when the demand for accommodation was greatest. The percentage of the total male and female population in lodgings is by present day standards very substantial, and yet contemporary comparisons may reveal that lodging in the Vale of Leven was at relatively low or average levels. The instance of multiple occupancy implied in the census reports (Chapter 6) was also low, but seemingly favourable housing conditions and lower levels of overcrowding, especially true of Alexandria were in part attributable to the state of printworking which was not having to cope with the problems of success encountered in areas of heavy industry. This is not to suggest that no such problems existed, clearly parts of Bonhill and Renton suffered from severe overcrowding, but they

Figure 17:8 - Percentage of the Sample Male Population in Lodgings: Vale of Leven 1861-1891

	1861	1871	1881	1891
Percentage of total Male Population	8.7	4.5	8.7	5.2
Percentage of Lodging Population who were Irish	11.5	32.1	31.7	11.9
Percentage of Lodging Population who were 'Nearby Scots'	46.9	28.3	40.4	62.8

Figure 17:9 - Percentage of the Sample Female Population in Lodgings: Vale of Leven 1861-1891

	1861	1871	1881	1891
Percentage of total Female Population	5.6	3.4	9.8	5.2
Percentage of Lodging Population who were Irish	47.3	22.2	42.7	36.1
Percentage of Lodging Population who were 'Nearby Scots'	23.7	22.1	40.4	47.2

were neither as widespread nor as dire as those encountered in Dumbarton.

Male levels of lodging ran slightly ahead of the female levels in the first two censuses, female levels gaining thereafter; but the pattern of gain and loss over the period was similar. There were divergencies in the ethnic composition of the male and female lodging groups through time. As figures 17:8 and 17:9 show, the Irish contribution to the male lodging population being at its highest in 1871 and 1881, whilst the Irish contribution to the female lodging population was greatest in 1861 and 1891. With the exception of 1871, Irish females were always more likely to be lodgers than Irish males, a reverse of the overall male/female trend. The 1871 slump was the result of out-migration which saw the number of Irish females in the 15 to 54 age group drop over the decade leading up to that date. A decline in the Irish male population occurred too, but because 'nearby Scots' males left in even greater numbers Irish males are highly over-represented among lodgers in 1871. By 1881 with the resurgence in Irish migration identified in Chapter 14, around 23% of Irish males and 29% of Irish females were lodgers. However while the Location Quotient of Irish females in lodgings rose, between 1871 and 1881, that for males declined simply because many more non-Irish males were in lodgings at that census year too.

Among 'nearby Scots' levels of lodging were lower and with the exception of 1881 more men than women were in lodgings. Statistics which tend to highlight the important role which Irishwomen played in printwork employment.

DUMBARTON

Among the male population, Dumbarton was host to much higher levels of lodging than the Vale of Leven, see figure 17:10, a reflection of the dire housing situation which had caused some shipyard

workers to live outwith Dumbarton and was an inevitable consequence of the rapid growth and success of Dumbarton's heavy industrial sector. Only in 1891 did the proportion of lodgers drop back to levels akin to those in the Vale, not because of a slackening in population growth but due largely to the extension of housing, particularly eastwards. The differential between males and females in lodging was much greater than in the Vale simply because the lack of job opportunities for women deterred the in-migration of young, single women who were unattached to families. As figure 17:11 shows the proportion of the female population in lodgings was never more than 2.3% in 1861 and it declined slowly thereafter.

With a larger Irish population than the Vale, these immigrants make up a bigger proportion of the lodging population than those from 'nearby Counties' but a comparison of Location Quotients for Irish males in the Vale and Dumbarton show both to have been over-represented, see figures 17:8 and 17:10. The degree of over-representation in Dumbarton was consistently high throughout the 1861 to 1891 period and highest in the Vale over the middle decade. By 1881 in Dumbarton six in every ten lodgers were Irish. This was the result of an influx of Irish males in the 1871 to 1881 decade which ran counter to the general trend among the mobile male population in that decade which exhibited less unequivocal growth (see Chapter 12).

In 1891 Dumbarton had the lowest percentage of adult males recorded as being in lodgings, and in the Vale the second lowest total, after 1871, was achieved. Whether this was part of the long term decline in lodging or merely a periodic slump is impossible to tell; but as the population became less migratory, jobs became more secure and housing improved, lodging would indeed decline. An older, smaller and more sedentary Irish population must have contributed to this improvement. Nonetheless, it would be misleading to interpret this as meaning that problems created in the 19th century were put behind the people of the industrialised West of Scotland as the century

Figure 17:10 - Percentage of the Sample Male Population in Lodgings: Dumbarton 1861-1891

	1861	1871	1881	1891
Percentage of total Male Population	15.5	12.8	15.7	7.8
Percentage of Lodging Population who were Irish	45.8	40.5	57	46.9
Percentage of Lodging Population who were 'Nearby Scots'	28.1	30.7	25.6	27.5

Figure 17:11 - Percentage of the Sample Female Population in Lodgings: Dumbarton 1861-1891

	1861	1871	1881	1891
Percentage of Female Population	2.3	2.1	1.7	1.3
Percentage of Lodging Population who were Irish	55	20	47.6	37.5
Percentage of Lodging Population who were 'Nearby Scots'	35	24	28.3	31.1

ended. Inadequate housing, lodging, erratic employment cycles and the spectre of disease now in changed form, (children were still its main target, but the devastating waves of sanitary related diseases which affected the working class population per se, were in recession) persisted well into the present century.

LOCATIONAL ASPECTS OF LODGING

a. THE VALE OF LEVEN - SEE FIGURES 17:12 AND 17:13

Females may have made up the majority of mobile age group migrants to the Vale but proportionally fewer women than men were in lodgings at the earlier two census years. Increasing opportunities for women at the printworks indentified by Docherty (1982) led to a higher proportion of female lodgers than males in 1881 and similar rates of lodging in 1891.

The incidence of lodging in both the Vale and Dumbarton was directly correlated to relative industrial success and Irish immigration. So lodging was less prominent in the Vale at 1871 and 1891 census points, especially in the earlier years when very low levels were observed. The decrease in lodging did not occur evenly over the Vale in the 1861 to 1871 decade. As figure 17:12 shows, even with a lower level of lodging in 1871, Bonhill had only one ED with an over representation of male lodgers. Renton was almost always the core area for lodging, this associated especially with the large Irish presence in the village. Alexandria, like the other villages, may have suffered a net loss of lodgers but the fact that over-representation in a few EDs continued through to 1871 emphasizes its superior status as the main service and industrial centre in the valley proper.

Bonhill, in contrast, which suffered the loss of Ferryfield Printworks in 1864 and actually lost population over the

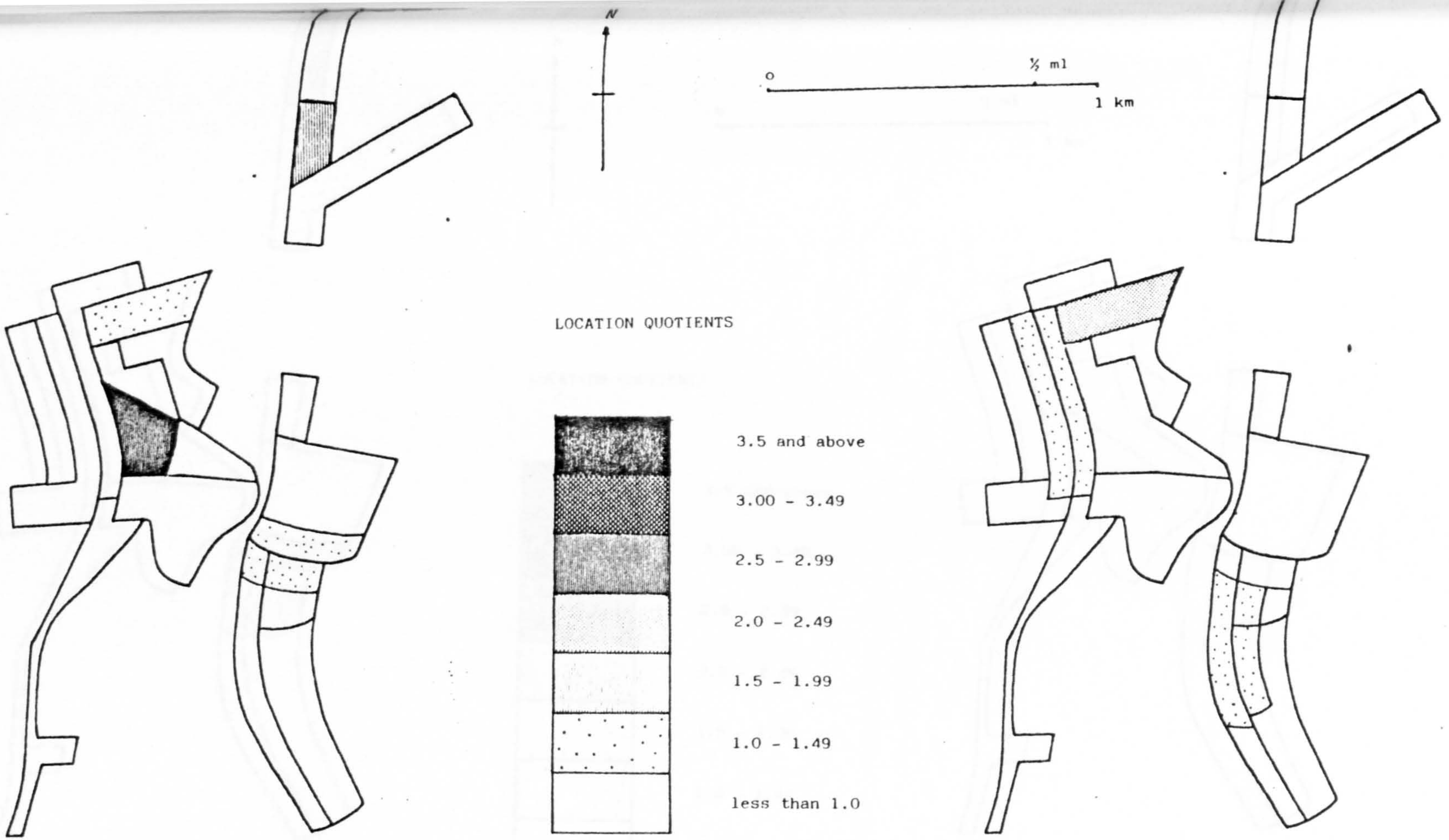
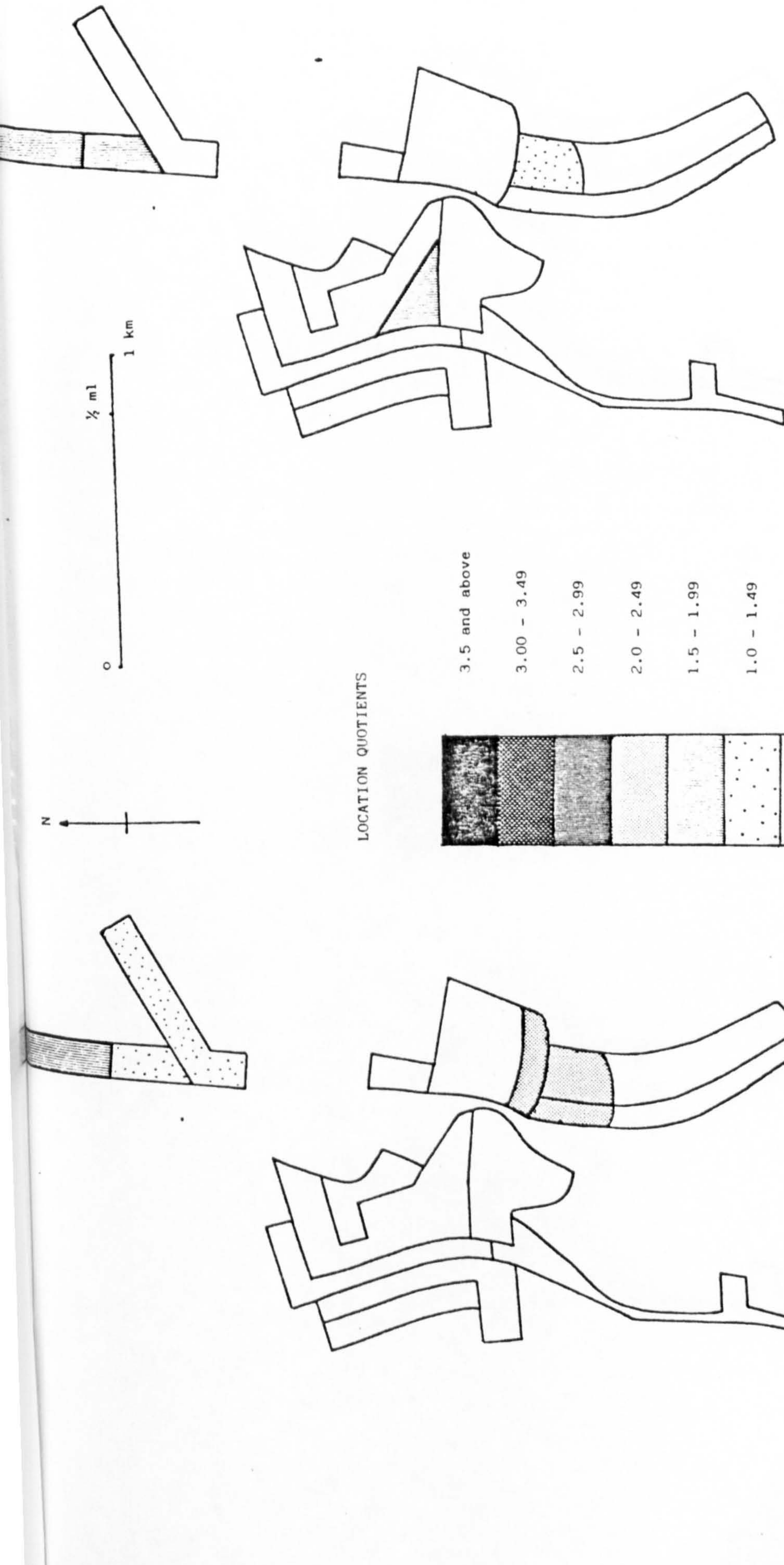


Figure 17:12 - Location Quotients
Male Lodgers:
Vale of Leven;
1861 (left), 1871 (right),
1881 (overleaf left),
1891 (overleaf right).


0
½ ml
1 km
N
LOCATION QUOTIENTS
3.5 and above
3.00 - 3.49
2.5 - 2.99
2.0 - 2.49
1.5 - 1.99
1.0 - 1.49
less than 1.0

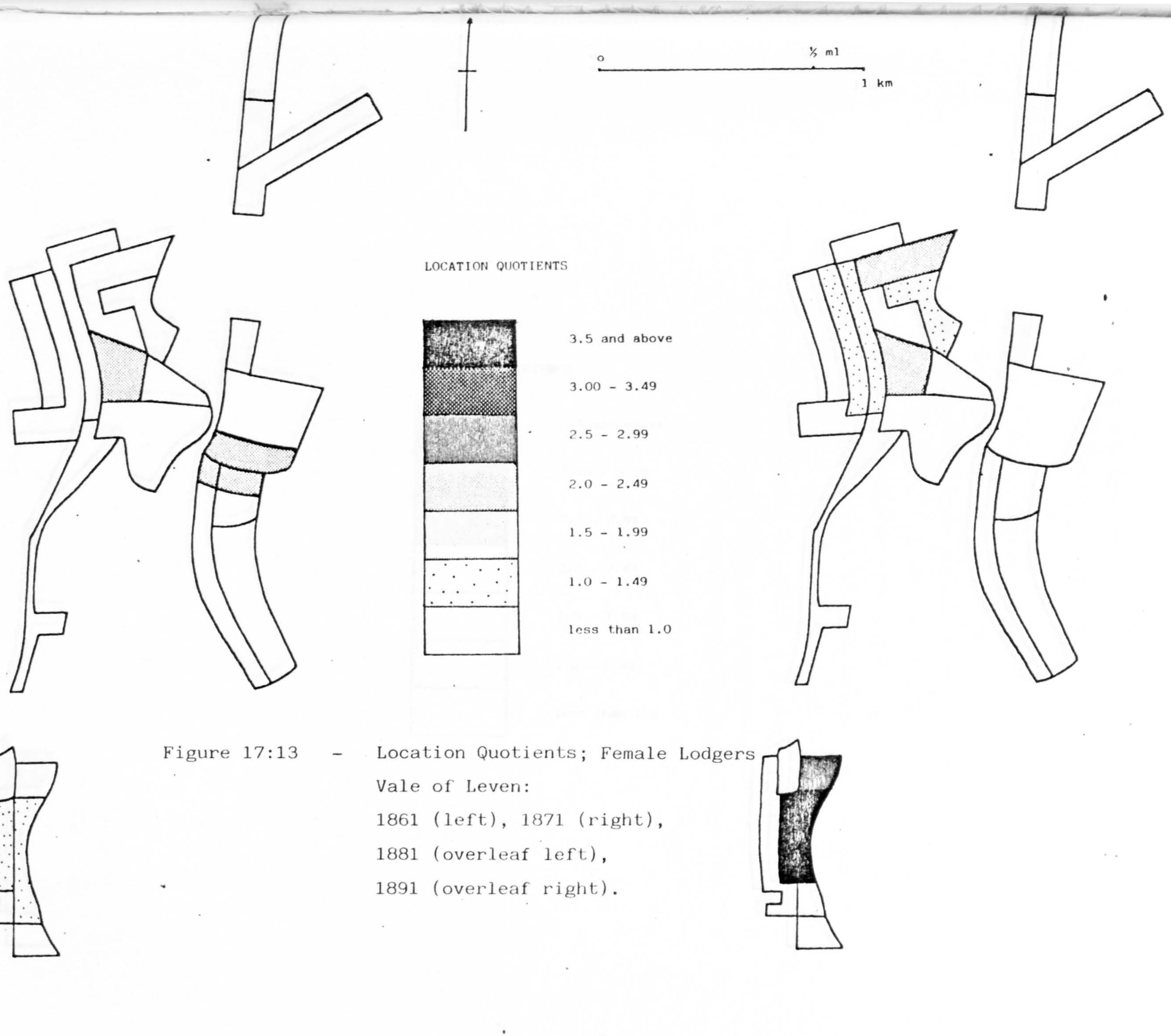
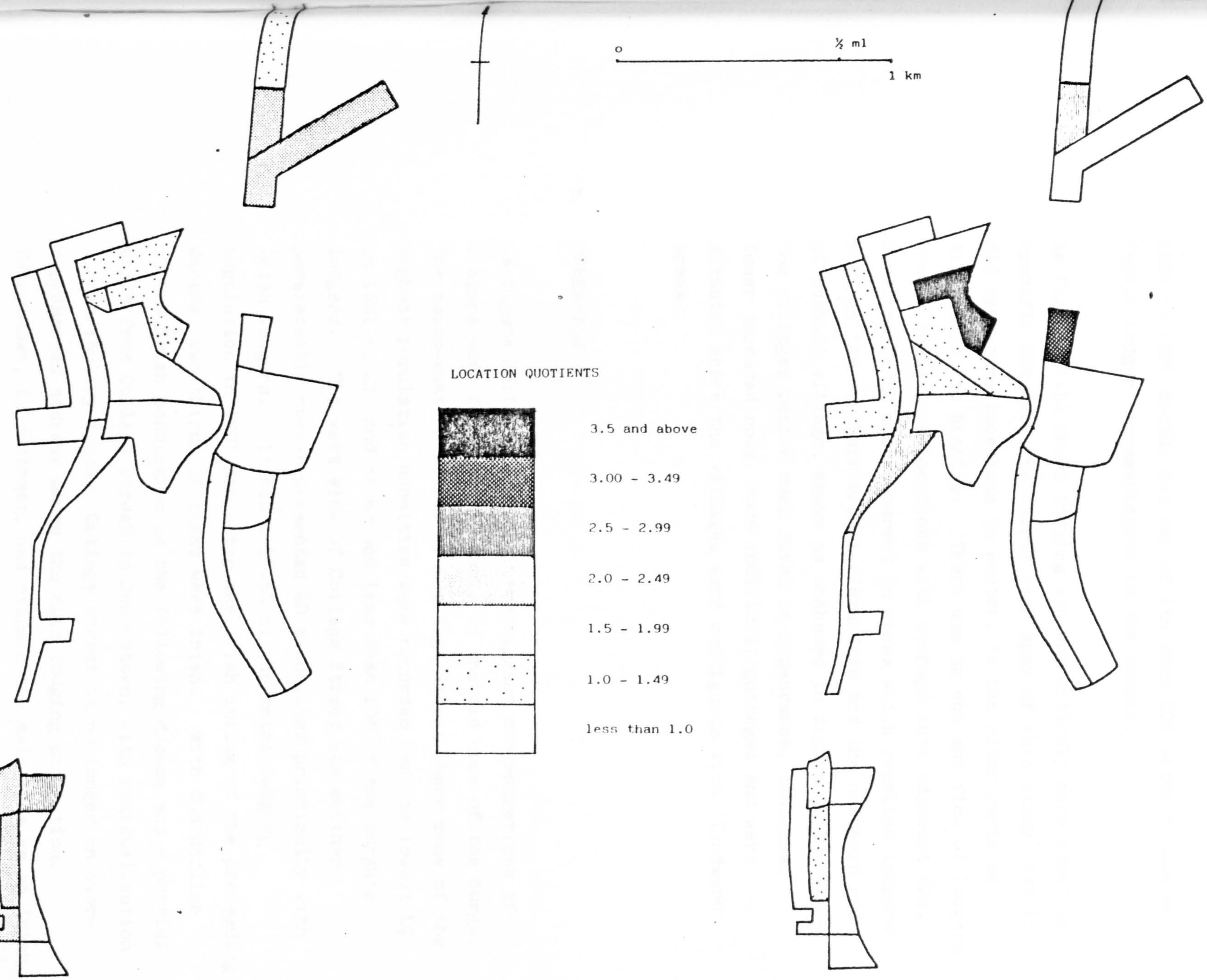


Figure 17:13 - Location Quotients; Female Lodgers
Vale of Leven:
1861 (left), 1871 (right),
1881 (overleaf left),
1891 (overleaf right).


0
½ ml
1 km
LOCATION QUOTIENTS
3.5 and above
3.00 - 3.49
2.5 - 2.99
2.0 - 2.49
1.5 - 1.99
1.0 - 1.49
less than 1.0

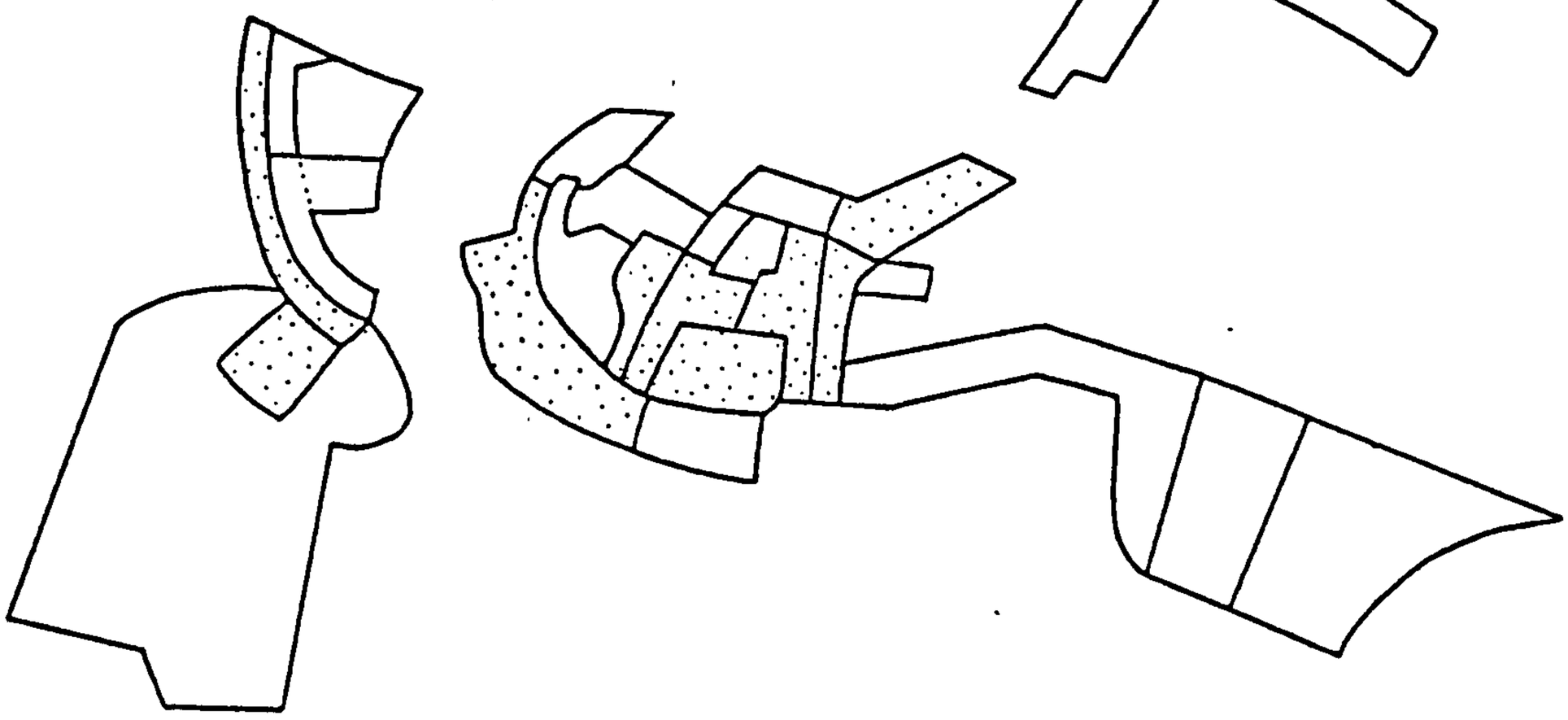
1861 to 1871 decade had two of its four EDs without male or female lodger representation in the sample.

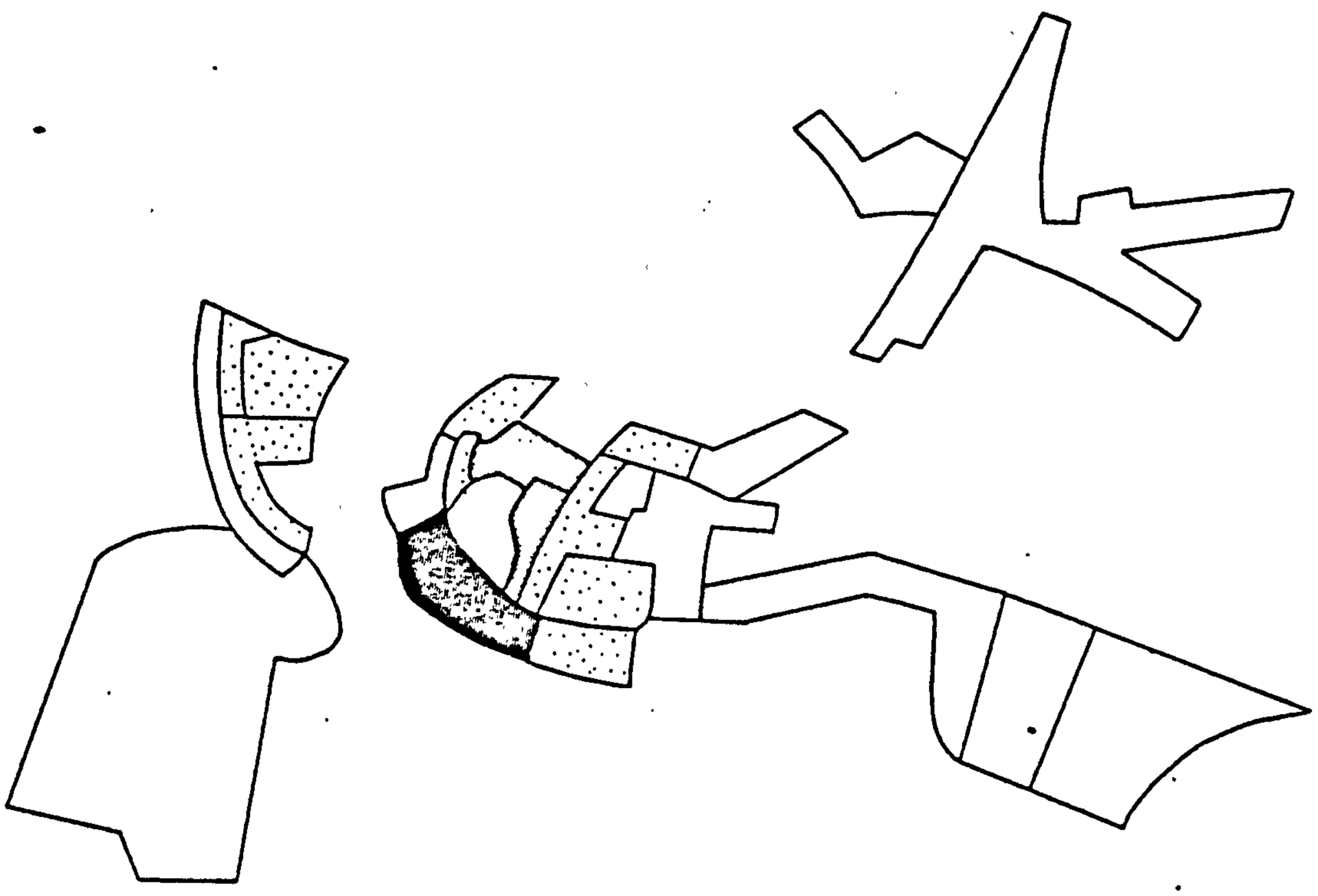
As figure 17:12 shows lodging was not entirely persistent to specific EDs over the thirty year span of this study, but it did have core locations in Renton, in the older parts of Alexandria and Bonhill. There was an ebb and flow of lodgers around these core locations with seepage into adjacent EDs. Persistence is more apparent in areas which repelled lodgers such as the southern end of Alexandria and the northern end of Bonhill village, shown as unshaded in figure 17:14, where the villages became more rural in appearance, contained fewer terraced rows, more individual cottages and were situated where the villages were contiguous with 'landward' areas.

b. DUMBARTON

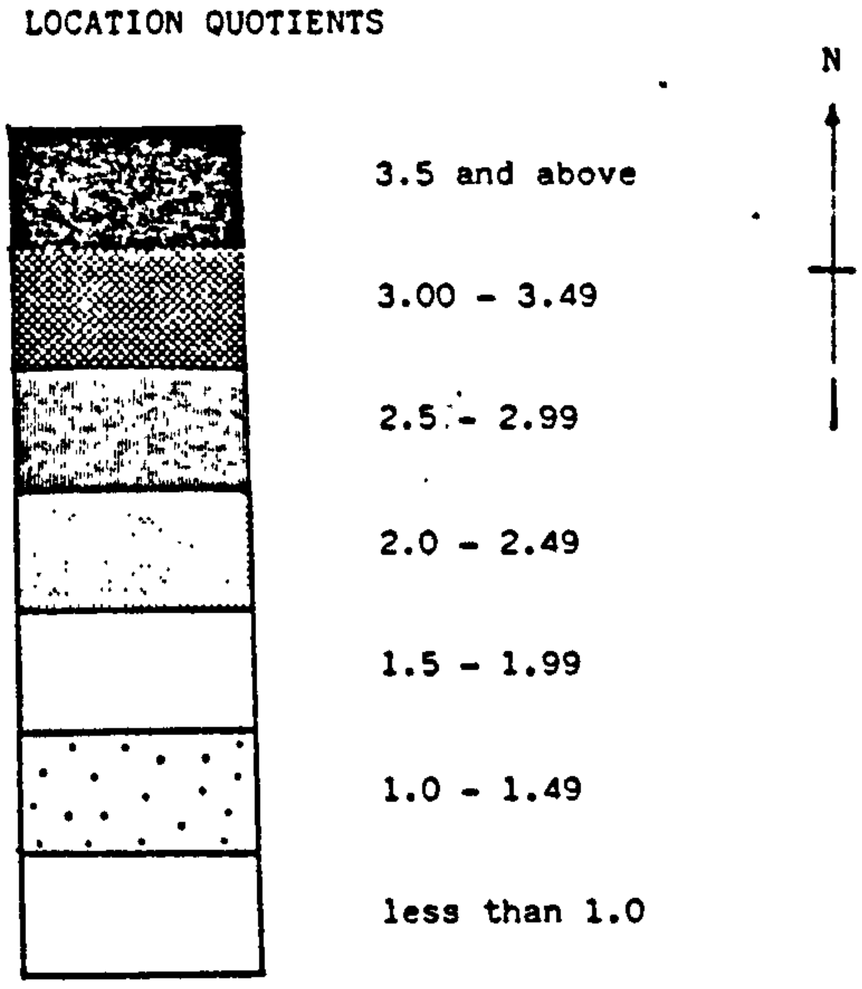
As figure 17:14 illustrates, the highest concentrations of lodgers were found persistently in the old core of the burgh. The south-western sector of the High Street where some of the highest population densities were recorded had its lowest LQ in 1861 (1.2), and never had less than 10% of the burgh's lodgers. The west side of College Street was another persistently over-represented ED associated principally with Irish lodgers. It had c 17.5% of the total lodging population in 1881 and after the Irish influx of the preceeding decade, two thirds of these were Irish. With the decline in the Irish population in the following decade and a partial shift from College Street to Dennystown, with residualisation a contributory factor, College Street is no longer an over-represented address among the male lodging population. Dennystown, in contrast, had assumed the main role as an Irish reception area containing 16.2% of all lodgers, and nine out of every ten of these were Irish.

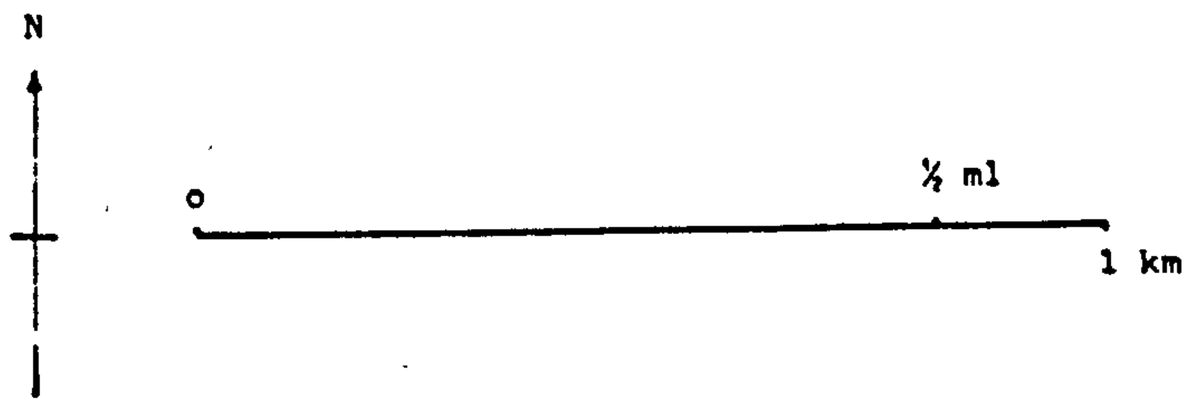
Figure 17:14 - Location Quotients
Male Lodgers: Dumbarton;
1861 (top), 1871 (bottom),
1881 (overleaf top),
1891 (overleaf bottom).

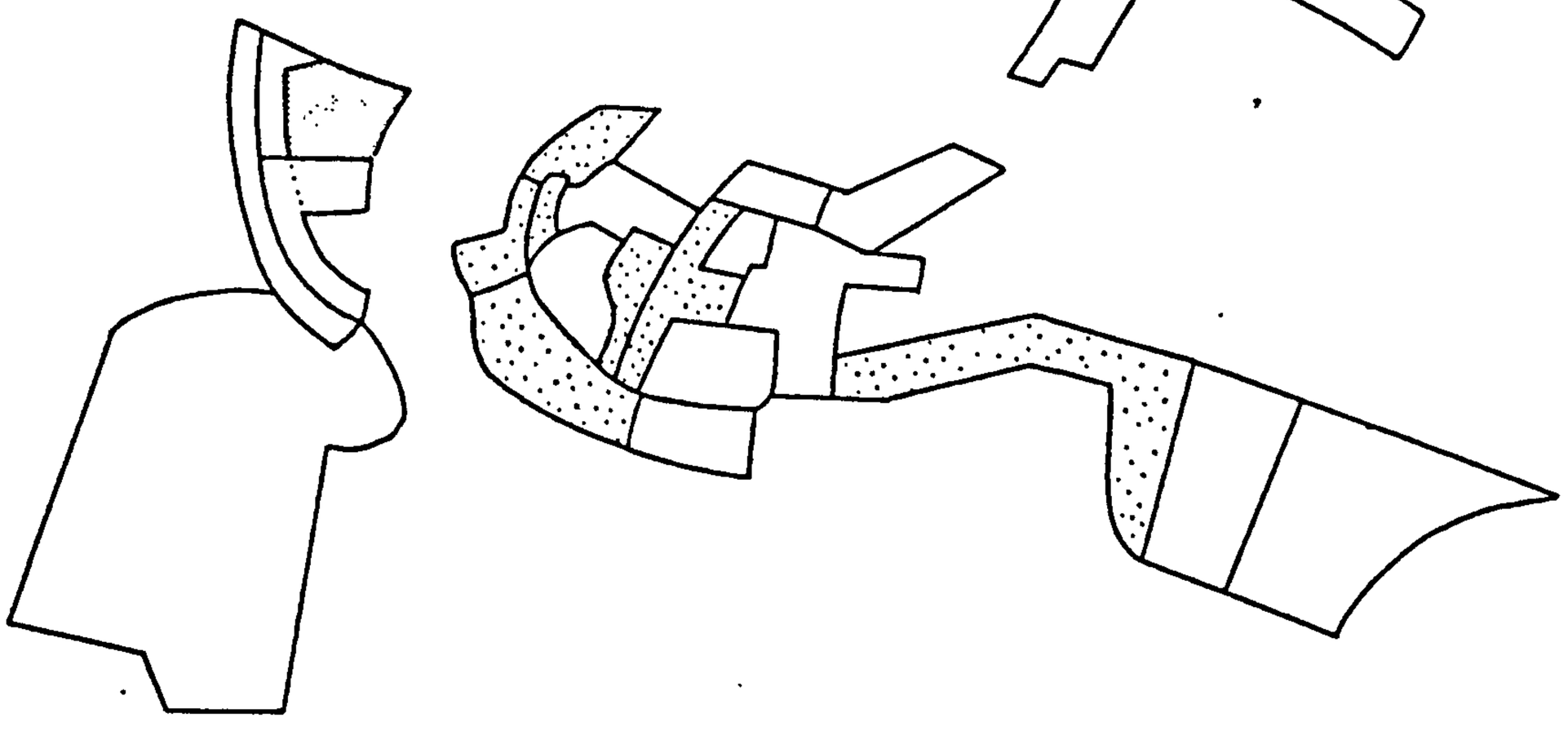




LOCATION QUOTIENTS







It is only in 1891 that LQs of more than 1.1 are recorded outwith the core area, in the rapidly declining Dennystown area, associated as described above, with Irish lodging; and at Burnside a distinctly 'lower factory' terrace in the east end of the town. However, it should be remembered that the proportion of lodgers in the male population was just under half that recorded in 1881 and so relative concentrations were in fact weaker than previously because the overall lodging ingredient was weaker.

If lodging can be taken as a sign of deprivation in a burgh where between 8% and 15% of the male population were lodgers then the relative distress of the overcrowded EDs in, and immediately around, Dumbarton High Street is confirmed. In the changing circumstances of Dumbarton over this period, as industry and population bloomed against a background of great mobility and its residential fabric extended considerably, then the persistence of the south west sector of the High Street as a reception area for lodgers is unusual. But it was always the most densely populated of the four approximately similar sized segments of the High Street. With its multiplicity of backland constructions it was probably the least healthy of all Dumbarton's EDs, its high population densities the result of a proliferation of households which kept lodgers whether legally or illegally [1].

SERVANT KEEPING

Figure 17:15 below contrasts the percentage of people in the total population of Dumbarton and the Vale of Leven who were servants in residence. Thus while industrial towns would be expected to host a small proportion of such servants in their population it is an indication of the Vale's immaturity that this level was very low.

Figure 17:15 - Servant Keeping: Servants in Residence; As a percentage of the total sample population at either location

	1861	1871	1881	1891
Vale of Leven	0.7	0.9	0.9	0.6
Dumbarton	2.5	2.2	1.6	1.7

In Dumbarton both the percentage of population in residential service and the larger social areas are more amenable to interpretation at the ED scale of analysis. In 1861 nearly 23% of servants were to be found in two of the four High Street EDs, and despite being marginally under-represented here in terms of the overall proportion of Dumbartons population resident in these EDs, it suggests that the highest status households had not completely fled the core by this time. Indeed the only ED, apart from the high status Westbridgend/Kirktonhill, showing a definite over-representation of servants was in Church Street, contiguous with the east end of the High Street. In the previous chapter it was demonstrated that Church Street had contained an inordinate number of high status individuals in 1861, but that this concentration had tended to drift outwards to Strathleven Place by 1871; part of the removal to the periphery. It was a movement which was neither encouraged by transport improvements, nor did it prompt transport extensions, for here it was probably due to the desire for space on which to build extensive houses with gardens, combined with the wish to avoid the unhealthy High Street.

Richard Dennis (1984) has recently cast doubt upon the veracity of claims made for the extension and improvement of transport networks as major agents of residential segregation. In Dumbarton it was neither an active nor necessary factor in the differentiation of social status groups. Had it been the prime determinant of segregation then 'small' towns rather than 'large' ones may well have shown signs of earlier separation. High status people gravitating towards the periphery in smaller towns because the distance to services in the core was still not prohibitive, whereas in larger towns the desire for a move to the periphery had initially to be tempered by the need to be close to goods and services, before transport improvements allowed their escape. Received wisdom suggests that larger towns became segregated first. Of course there is again the perennial problem of the scale of analysis and the scale of differentiation.

To counter the above argument by suggesting that in small towns there was no need to flee the centre is contrary to evidence which shows Dunbarton's medieval core to have been a very unpleasant place for the mass of its population, certainly by the 1850s. Dumbarton had its exclusive, segregated, high status areas by the 1860s, and this extended to other parts of the periphery as the town grew, but at ED and even street level there was a good deal of social mixing in 1861. For example ED number two on the south east of the High Street may have had c 12.5% of the residential servants but it also had an over-representation of lodgers (LQ 1.2).

By 1871 residential servant keeping, as figure 17:16 shows, was located in two main areas the Westbridgend/Kirktonhill ED and the Strathleven Place/Bonhill Road ED, where they were always a small, but highly over-represented group. This would imply that the highest status households were firmly segregated by this date, 'modern' levels of segregation where the working classes showed clear signs of differentiation along a skilled/unskilled divide was not, by Duncan and Duncan's (1955) rule of thumb evident until 1891. This is somewhat of a simplification for 'lower' and 'higher' factory workers had been segregated by the margin of an ^{1}D of 30 at least since 1861, possibly because a separation along an occupational axis helped to enhance it. The highest street level ^{1}D (40) did indeed occur in 1891, but what caused the dichotomy was a weakening of the separation between 'lower factory' and 'labourer' status groups along with the growing distinctiveness of skilled working class (or 'higher factory')elite. 'Lower factory' and 'labourer' status individuals while still segregated (^{1}D 30) in 1891, were less so than before, because there were fewer of the latter, and little provision had been made in thirty years to provide homes which 'lower factory' workers could inhabit or inherit. Again there is a clear demonstration that a simple skilled/unskilled categorization of the working classes as in scheme A will produce indications of increasing segregation but will do little to hint as to its nature.

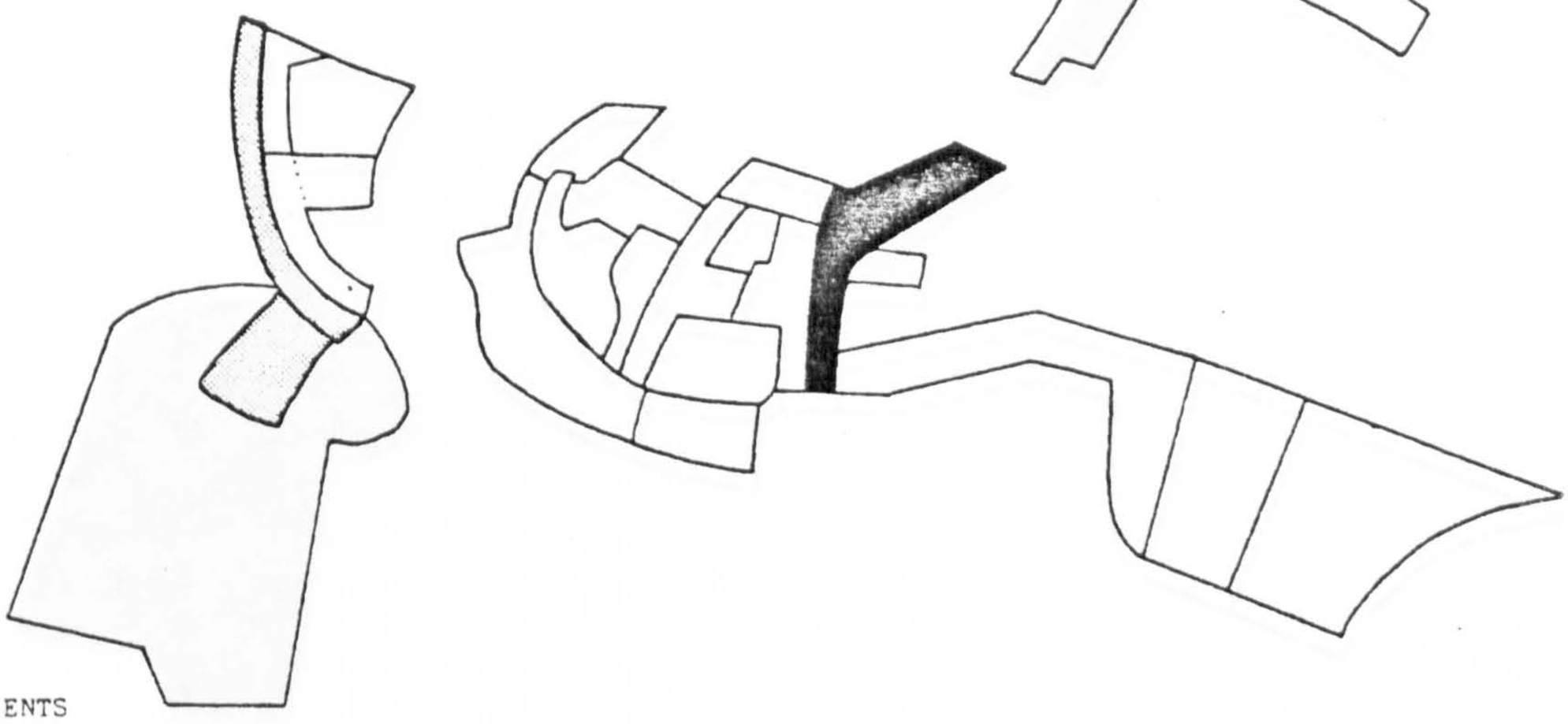
Figure 17:16 -- Location Quotients

Servants: Dumbarton;

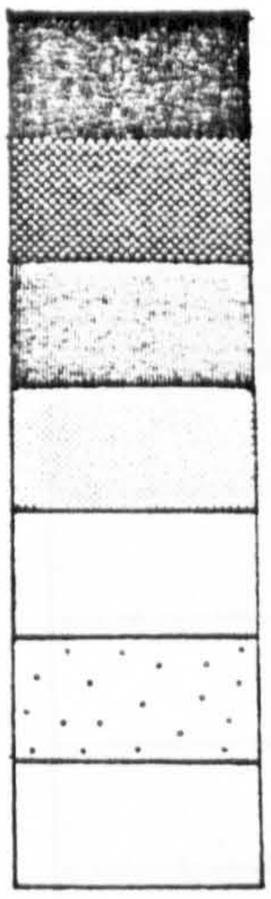
1861 (top), 1871 (bottom),

1881 (overleaf top),

1891 (overleaf bottom).



LOCATION QUOTIENTS



3.5 and above

3.00 - 3.49

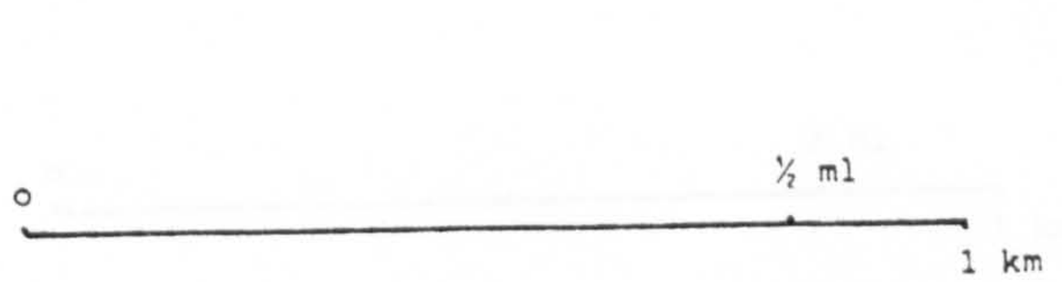
2.5 - 2.99

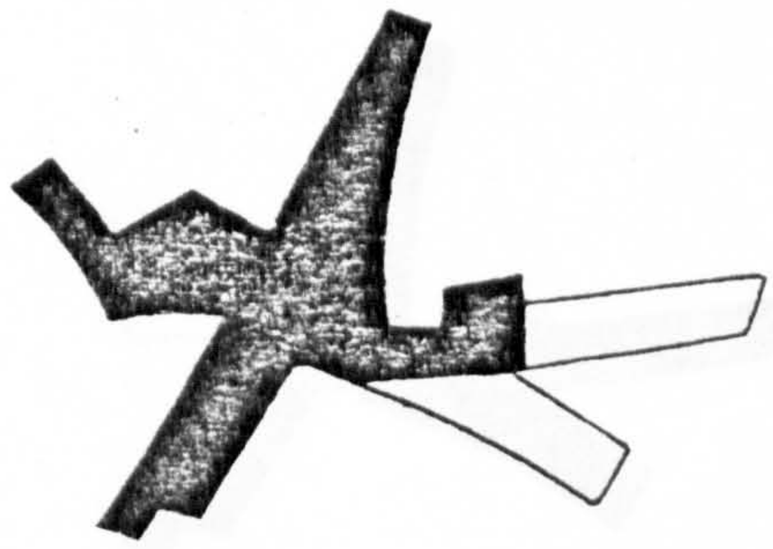
2.0 - 2.49

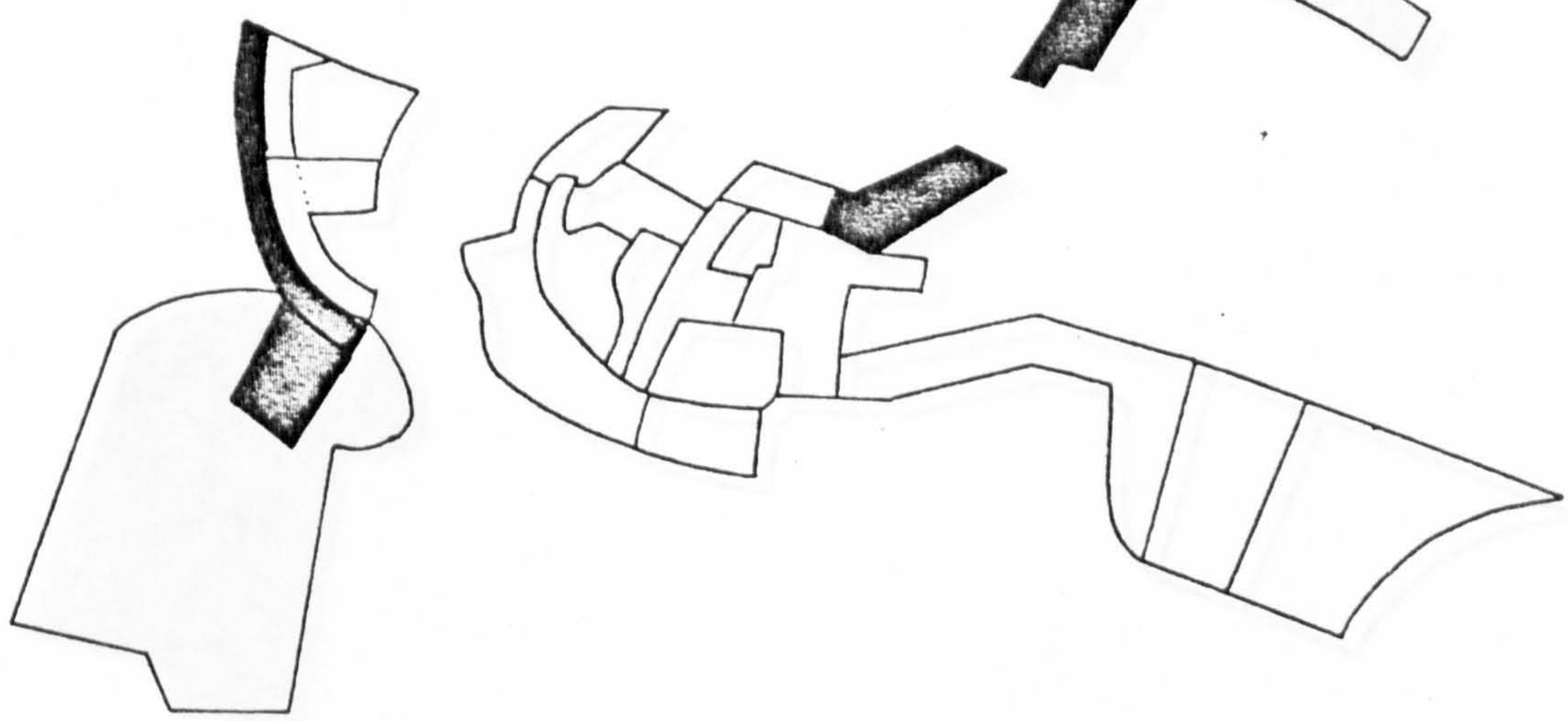
1.5 - 1.99

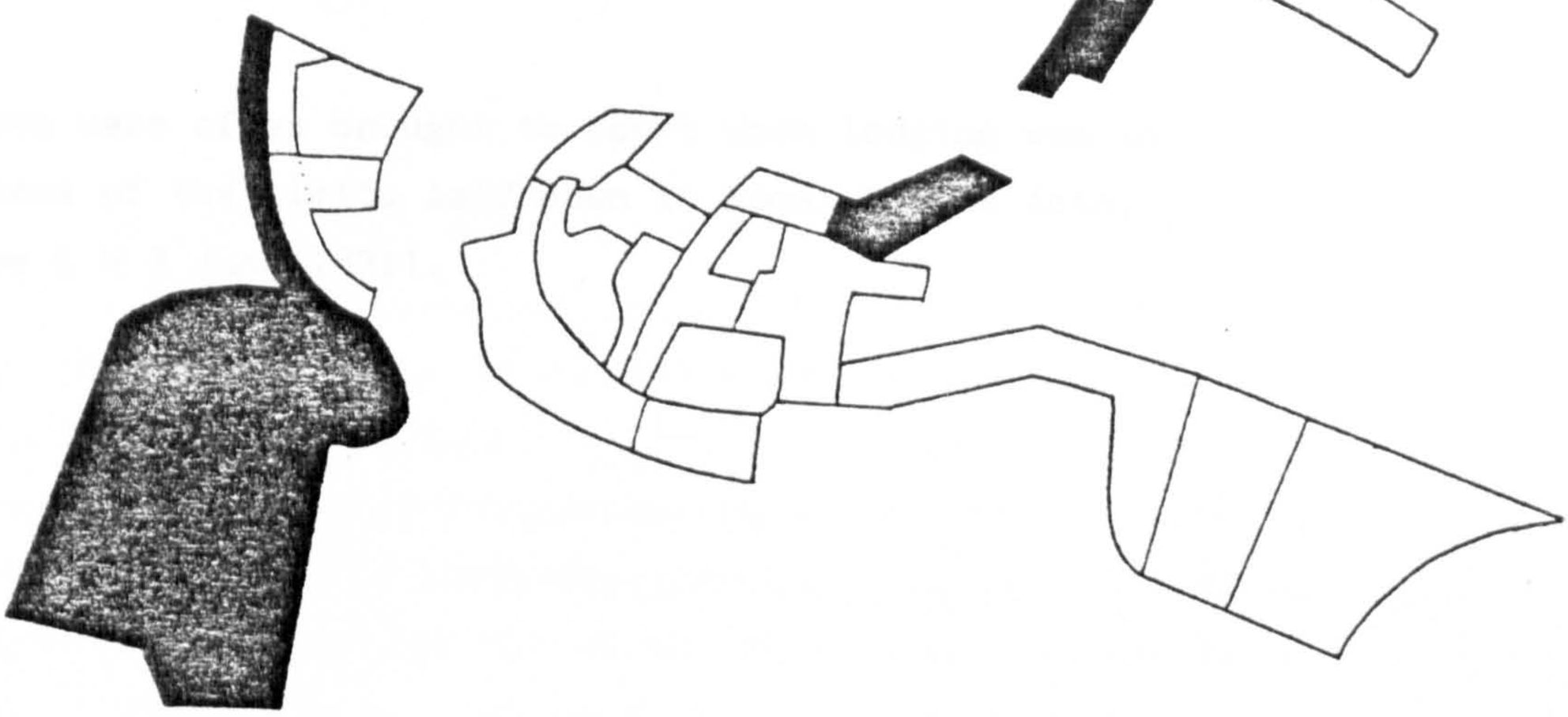
1.0 - 1.49

less than 1.0

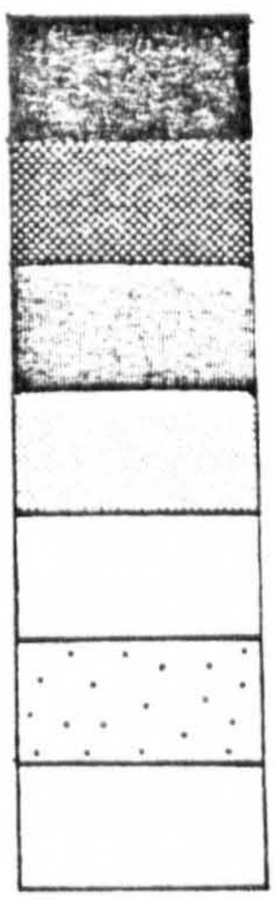








LOCATION QUOTIENTS



3.5 and above

3.00 - 3.49

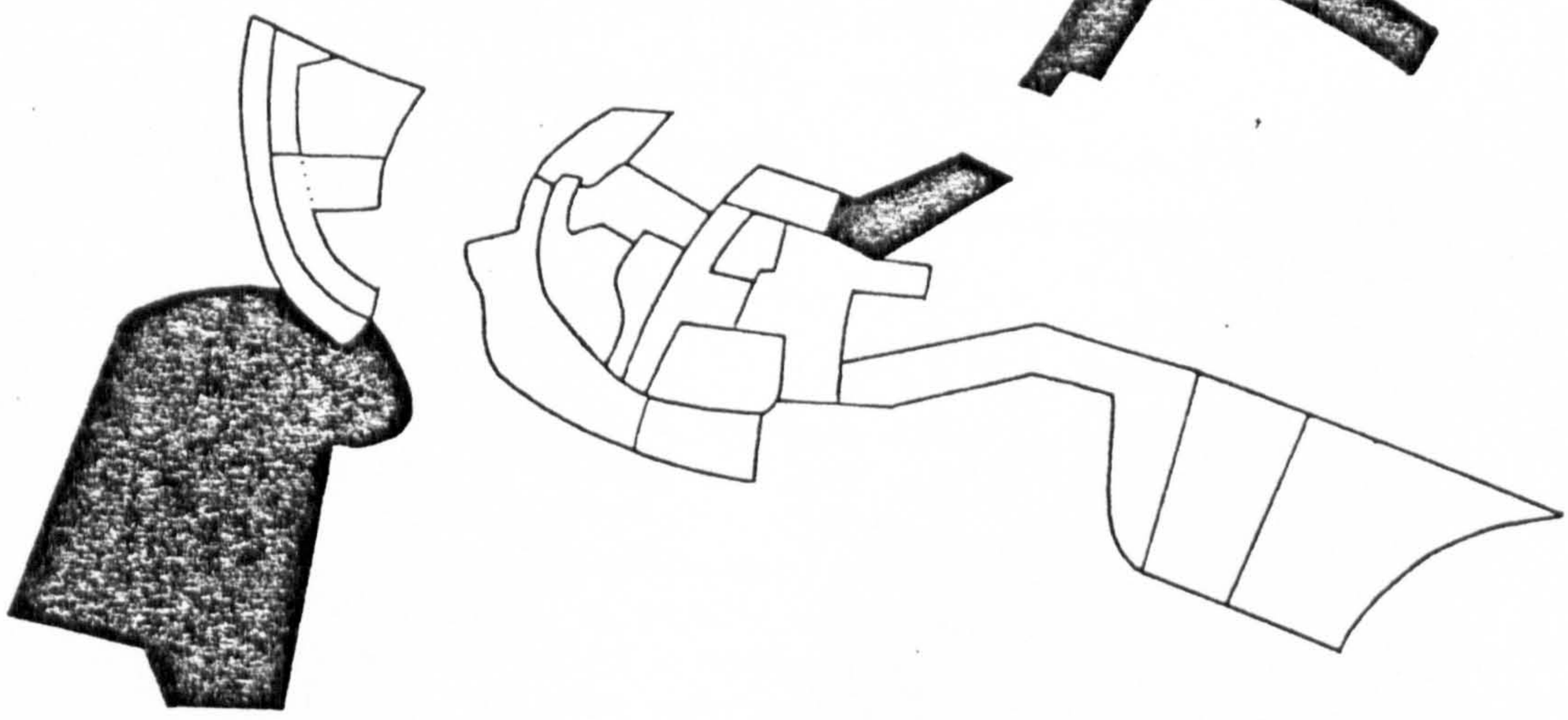
2.5 - 2.99

2.0 - 2.49

1.5 - 1.99

1.0 - 1.49

less than 1.0



NOTES

1. Cases were often brought to court when lodging was in excess of the limits laid down in Local Police Acts, (see L H 8 June 1871).

CHAPTER 18:

CONCLUSIONS, WITH SPECIAL REFERENCE TO RESIDENTIAL DIFFERENTIATION, AND POSTSCRIPT

The aim of this study has been to attempt a recreation of the evolution of communities through the investigation of their demographic, occupational, social and ethnic structures and their broad migratory patterns over the 1881 to 1891 period. The settlements were chosen for their marked differences in character which belied geographic closeness. Regional variations, which would have been present had two widely distant communities been selected, did not play a vital role. Consequently each community's early history, morphology and industry become more important and these are linked to population and migration dynamics and the associated social patterns which evolved throughout the second half of the 19th century.

In contrasting the findings for Dumbarton and the Vale of Leven an attempt was made to isolate the factors which produced such discrete social patterns, both spatially and aspatially. The socio-spatial patterns are discussed with recourse to the occupational, migrational and ethnic frameworks which under-pinned them, without which, such an examination of these patterns would be a sterile exercise. It would now seem possible that for Dumbarton and the Vale of Leven the observed differences in the residential patterns can be explained in terms of the major factors purported to shape differentiation. The approach did not involve a factor analysis but rather as Dennis (1984) suggested with respect to the modernity of society:

> 'It is (also) more helpful to distinguish individual elements of modern society - a modern occupational hierarchy, a modern class system, a modern relationship between residence and workplace, a modern housing market, a modern pattern of residential mobility - than to collapse everything into one multivariate statistical analysis' (P245)

HOUSING, MORPHOLOGY AND THE ENVIRONMENT

The role of housing in the development of residential differentiation is central. Its type and location affected the profiles of people most liable to be drawn to it. Through time and in relation to other developments in both housing and technology it can become more or less desirable. Houses constitute the holes in the urban peg board, the shape of each opening influences the type of people liable to fit with greatest ease. But, unlike a peg board, the shape of the apertures can change through time.

The growth in differentiation along social status lines was greatly facilitated by housing developments in both Dumbarton and the Vale of Leven, particularly in the 1881 to 1891 decade when housing developments flourished and the vast majority of segregation indices calculated here were, by the latter date, at their greatest extent within the study period. For this decade more than any previously saw the introduction of small but, for settlements of this size, substantial and vitally important planned units of housing. In both areas, the developments consisted of a mixture of detached and semi-detached houses along with larger, solid tenemental or terraced properties than had been built prior to this. In particular this occurred at the southern end of both Alexandria and Renton on Main Street and in the Newtown/Knoxland area of Dumbarton's east end. They were aimed at the professional classes and the 'labour aristocracy' respectively.

This relationship is very clear from the study of Dumbarton. The Dennys, already responsbile for the building of Dennystown, encouraged further building in the Newtown and Knoxland area, initially by making land available and playing a part in the setting up of the Dumbarton Building Society in 1873. Osborne (1980) is under no doubt as to the mutually beneficial effects which subsequent developments had, both for the owner/occupiers and for the Denny Company. A process which inhibited the mobility of the owner/occupiers and encouraged stability. Labour mobility had

cost the Denny Company skilled manpower during an early industrial dispute when many workers left the town. House owning anchored just such skilled workers to their home base; the manual working elite being in the forefront of the new Building Society and among the main beneficiaries of its activities. By 1884 22.3% of the house owners were carpenters, 15.6% joiners, 15.6% platers and 12.2% were rivetters. Even among the smallest one room and kitchen homes no labourers were to be found on the home owning list. This had the effect of producing a strongly 'skilled manual' profile to the Dumbarton East EDs, with an under-representation of 'lower factory' workers, 'labourers' and Irishmen after the 1861 count.

The central area of the town did not, as a consequence, decline dramatically in status because continuing population growth and net in-migration ensured that the pressure on this area eased very slowly. Housing supply failed to keep pace with demand. Filtering and so segregation in the central area was still extremely localised. On the fringes differentiation was much more definite, but not based entirely on social status, as among the working classes occupational and ethnic groupings were also important. The resulting pattern saw two high status zones, one perched on high ground to the extreme south west of the burgh, Kirktonhill, the second to the north of the town in the Bonhill/Roundriding Road area, both in the main buffered by a zone of higher working class housing separating them from the poorest areas. The remaining areas of housing outwith the core consisted of Dennystown west of the bridge, a declining area by 1871 and associated with 'lower factory' groups, foundry workers and an increasing Irish presence, and Dumbarton East as described above.

Risk Street, Meadowbank Street, College Park Street and Church Street on the immediate fringes of the core had some of the best working class housing available in the central area, being of relatively recent construction and with a marked absence of backland repletion. The High Street frontages were mainly the preserve of 'trade' and 'higher factory' workers, while much of

College Street and the High Street's choked backlands housed the poorest workers. In the latter case many of the cellars or structures built here were in direct contravention of the modest planning regulations laid down at this time (L H 6 April 1871).

In Dumbarton there was a direct correlation between the size of the planned unit and the degree of segregation at a given scale which resulted. The larger the planned unit the more likely that it would be inhabited by households of similar profile as in Kirktonhill, Dennystown and in some of the Dumbarton East developments south of Glasgow Road. In contrast, the High Street was extremely heterogeneous in building style, size and plot coverage with the result that, on the same scale as the developments mentioned above, there was a tremendous variety in the profiles of co-residing groups especially with respect to occupation and status.

Housing, as the previous paragraph implies, must be viewed within the morphological framework of the town, which itself is subject to a number of influences not least among those being the nature of the physical environment. The morphology of a town consisting of buildings, plots and streets, is linked to housing growth in the development of residential differentiation. The morphological view is an overview of the whole development of a settlement where planned units and identifiable phases of growth have left a legacy on the urban landscape. With the help of historical maps these can be read to produce a chronological account of the town's growth (Conzen 1968).

A cramped pattern of streets and repleted plots typical of many medieval town plans would tend, until desertion or clearance took place, to exhibit low levels of segregation at ED scale. Only with the addition of larger planned units is there an obvious social patterning associated with each unit as described above.

The original morphology of the Vale's planned villages was so simple and small scale that it would render any attempt to delimit differentiation within the 'working classes' untenable. Later

common plan elements in Alexandria and Renton replicated social status patterns in these villages where generally there was an old core area of mixed, but predominantly lower status households, with by 1891, an emerging labour elite at the southern end of either village. 'Professionals' lived nearby, or 'behind' each village, on, or close to, higher ground. The glaring departure to this pattern was a relic of the early days of factory village life where the original printwork owners' houses, by far the grandest in the valley stood close to the works and the river in what was left of their estate grounds. Levenside, Dalquhurn and Cordale houses which all appear on Baird's map of the valley printed in 1824, when the villages consisted of no more than two or three streets with low building densities and many unfilled frontages, were still there in 1891.

The bleaching, printing and dyeing industry may have given the valley its villages and its unity, but each settlement had its own morphological centre which helped to produce very low levels of segregation among manual workers when the Vale is considered as a single entity [1]. This does not invalidate the scale of investigation carried out here with respect to differentiation. It can provide an essential lesson for those carrying out studies of residential differentiation in even the largest of towns; that historical and morphological development cannot be ignored. Coming fresh to a town armed with a large scale, first edition, Ordnance Survey plan and cebs for 1851 may not be the appropriate starting place for a study of residential differentiation, in spite of a general ability to 'read' the plan. . There has to be recourse to information on the early pattern of urbanisation and industry taken from a variety of sources. A street map could hide the cellular nature of some conurbations. This may be important in a European context where a higher density of pre-industrial settlement will contrast with many of the more modern North American cities which may be multi-nuclear today but which grew from a single significant root. In the former case each relict village or district may have had its own service centre, its own trades and craft specialisms which would inhibit

the development of recognizable segregation patterns within the 'working class' and along a status axis.

The sheer size of a settlement will have important ramifications for differentiation, both in the ability to recognize it, for example at ED level and in the problems which it causes those who wish to be separated from the poor core. However, the fact that most mid 19th century British towns could be crossed on foot in under an hour did tend to ease this latter problem. Later transport developments either responded to, or encouraged expansion beyond the constraints imposed by the need to walk.

Physical features such as rivers and heights helped to shape growth. A river may well be a barrier to expansion as in medieval Dumbarton where the Leven to the west, 'drained lands' to the north and poorly drained marsh land to the east may have contributed to the compact nature of the burgh, its lack of commercial success apart. Even into the 19th century the burgh was almost entirely contained within its High Street, College Street, Church Street framework, an area which was to become ridiculously overcrowded in the space of twenty to thirty years.

In spite of bridging, the river still allowed the 'middle classes' to separate themselves from the mass of population and yet be within fifteen minutes walk from the Burgh Cross. Here, high ground was utilized so that even when the 'working classes' crossed the river to live in Dennystown they still sat below and apart from the 'professional class' housing in Kirktonhill and Westbridgend.

TRANSPORT

As described in the previous chapter, the role of transport developments in promoting residential differentiation has possibly been over-emphasized. Dennis (1984) suggested that in some

settlements where differentiation had occurred, transport was not a causal factor, but rather that it appeared as a result of expansion. That is, transport was an effect of expansion (and differentiation) not its cause. For the Vale of Leven and Dumbarton on map evidence alone, the considerable segregation of 'middle class' elements which was in place by 1891, neither had, nor needed, transport improvements to facilitate it. It was only on the publication of the third edition of the Ordnance Survey for this area (dated 1918) that cheap intra and inter-settlement transport was in evidence in the form of tram lines. There is little doubt that this encouraged further segregation in Dumbarton as it expanded eastwards along the tram route. There is, however, no evidence to imply that the burgh would not have continued its expansion at least up to its present eastern limit, which is about thirty minutes walk from Dumbarton Cross, had there been no trams or buses. Evidence from larger towns may emphasize a more central role for transport, but probably not until the last decade or two of the 19th century when the process of increasing differentiation was well under way.

INDUSTRIALIZATION

Industry, in creating a more urban society provided the impetus for spatial separation of different groups by virtue of its powers of attraction which brought a diversity of types into the town. In fostering overcrowding, pollution and consequently disease it impelled the better off to separate themselves from the heart of the problem, the inner town. By becoming increasingly specialized in each stage of the production process, it encouraged the fragmentation of labour and the fragmentation of the 'working classes' into smaller self-interest groups. Shaw (1977) attributes growing differentiation in part to the 'increasing scale of production'. A larger and more impersonal workforce shattering forever the craft bond between master, employee and workplace. The fragmentation of the 'working classes' encouraged the emergence of a labour aristocracy which while rarely

allowing individuals to transcend the 'middle class' - 'working class' divide, certainly promoted their physical separation from the mass of manual workers.

Dumbarton in 1861 still retained vestiges of its pre-industrial craft and commercial functions, with a higher proportion of people in 'trade' or working as 'artizans' or in non-factory unskilled work than the Vale of Leven, and yet there is no clear evidence to imply that Dumbarton was host to a less socially segregated society than the Vale.

The gulf between 'higher' and 'lower' factory workers was greater in Dumbarton partly as a result of a more complex industrial structure. For not only was there an important industry besides shipbuilding (foundry working) but there were an array of skilled trades absent in the Vale of Leven. Once again, the size of a particular group may have effected calculations as the unskilled element in the Vale of Leven was very large. Given that skilled workers were present in each village and that they were outnumbered two to one, there were no significant concentrations which showed up at ED level. Unlike the small groups of 'traders' and 'artizans' who situated along the main thoroughfares of each village, they had more in common with their unskilled colleagues than not.

The evidence suggests that among the non-factory 'working classes' and lower 'middle classes' traces of close knit 'medieval' burghal life remained in Dumbarton, but that the industrial workforce there was more highly fragmented than that which existed within the simple socio-industrial structure of the Vale's factory villages. When the dissimilarity of location for 'higher' and 'lower' factory workers is charted through this period (see figures 16:1 and 16:2) it was not so much at this stage the scale of production which was important in differentiation, although it may have been paramount earlier in the industrialising process, but the fragmentation caused by increasingly specialized tasks and importantly the presence of different industries in the

same town which caused differentiation to be at higher levels in Dumbarton. Industrial fortunes were also significant for they affected migration patterns (see Chapters 11 and 12) and migration flows had their impact on residential differentiation as the next section describes.

Related to the increasing scale of industry was the necessary separation of workforce from workplace which may have eventually resulted in differentiation along a social status axis. This separation did not occur overnight and indeed in its development an important psychological barrier had to be overcome; the perception that it was necessary to live as close to one's workplace as possible. In spite of long hours and the erratic availability of work in some cases, there was little need for workers to live so close to their place of work as they did in Dumbarton, a small town easily crossed by foot in twenty minutes. There was a desire, or perceived need, felt by the workers to be close to the workplace. After centuries of working the land, or working in a house cum workshop, or living in a small village, this bond was not easily loosened. Like the alienation identified by writers like Marx, where the necessity of ones labour becomes apparently lost as the task becomes removed from the direct provision of food or products which will support the worker and his family, and is instead confined to one small corner of the production process, so the relationship between home and workplace was not easily destroyed. Commuting by public or private transport is essentially a 20th century phenomenon, although the largest of cities like London saw an earlier start to this process. Transport improvements allowed the separation of house from workplace, the size of factory communities demanded it, but initially it may not have been perceived as desirable. Even in cities like Glasgow, preliminary evidence suggests that along the Forth and Clyde canal, in 1881 and 1891, there was still a strong tie between the occupation of workers resident nearby and the types of industry clustered along the canal [2]. The friction of distance remained strong in Dumbarton and the Vale of Leven and is extremely obvious when inter-settlement patterns are considered.

A handful of male prinworkers were identified from the sample as living in Dumbarton, although the desperate housing situation in the burgh did cause a small percentage of shipyard workers to live in the Vale.

When a town or city has an array of industries and these industries exhibit different tendencies in terms of the proportion of skilled to unskilled trades, and in rates of pay, there must be caution in describing social status separation without recourse to the occupational structure prevailing at that time. It would appear from current evidence, that it was not 'industrialization' per se which caused differentiation, but rather the form which industrialization took in a settlement helped to shape the social pattern. A largely undifferentiated industrial structure gave rise to low levels of segregation at the ED scale in the Vale of Leven. In Dumbarton different industries with, in the case of shipbuilding, a strongly hierarchical structure saw separation within the industrial workforce not only in social status terms but perhaps more importantly at this stage along industrial/occupational axes, so that in this case shipyard and foundry workers were generally found in very different locations, with the latter very strongly clustered.

Finally, it may be of interest to social historians who have identified the decline of broad 'working class' agitation with the rise of occupational fragmentation and growing sectional interests, that the undifferentiated Vale of Leven gained a reputation for left wing political activism during the difficult decades of the early 20th century (Gallacher 1982). Doubtless this was born out of an extreme situation of industrial decline, but lack of fragmentation within the workforce may have helped to produce united action.

MIGRATION

The cohesive nature of ethnic groups and the timing of their migrations, alongside the overall ebb and flow of population have

important implications for differentiation. These points have been emphasized in this study and consequently require little further elucidation. The incursion of the Irish provided a special opportunity to gauge the assimilation, differentiation and locational choices (or constraints) of an exotic population stream. Suffice to say that Irish influxes in the 1871 to 1881 decade saw a heightening in the indice of dissimilarity (^{1}D) when they are compared to those of 'nearby' origin, principally because the Irish tended to cluster in particular areas of Dumbarton and the Vale of Leven. An increase in their representation in these streets or EDs helped to accentuate their peculiar choice of location.

There was a status element to this also in that the Irish, being generally of low status and concentrating in their low status areas may have helped to increase the dissimilarity between 'higher' and 'lower' factory workers in the Vale of Leven. For Dumbarton the evidence is less certain as the overall slackening in migration over the 1871 to 1881 period may have helped to reduce differentiation among factory workers at ED level as was evident in the Vale a decade earlier (see figures 16:1 and 16:2). In these cases, the ebbing of total in-migration seemed to reduce competition for housing. Furthermore in repelling those whose attachment to the area was most tenuous and who were likely to be the least established, that is the poorest of the 'lower factory' workers and 'labourers', the remainder of the factory workers appeared to draw closer together [3]. (See Rodger 1982 on the role of competition and the market model as applied to housing).

Ironically in both Dumbarton and the Vale of Leven it was not a new wave of fresh Irish immigrants which brought out the highest levels of separation, but rather the decline and ageing of the Irish population already resident there which resulted in residualisation.

The major effects which migration had on differentiation here were for distinct ethnic influxes to heighten segregation, both in

terms of ethnicity and status because the predominantly low status Irish flocked to their established heartlands within these settlements. An ebbing in migration resulted in a decline in differentiation within the industrial workforce as competition for housing was reduced.

POVERTY, OVERCROWDING AND DISEASE

Perhaps the most obvious of all motives encouraging differentiation was the prevalence of overcrowding, poverty and disease, which infected most sizeable industrial towns in mid to late 19th century Britain. Housing developments provided the means of differentiation but these factors provided the incentive. Medical Officers of Health, government officials and newspaper reporters were all well aware, not only of the problems which industrialization and population growth brought, but also of the link between inadequate housing, overcrowding, poverty and insanitary conditions on the one hand and high death rates and disease on the other.

For the 'middle classes' space for development and safe distances from the rotten core were important in the preservation of a superior life style, lower rates of infection and lower death rates. Unfortunately, separate statistics for districts within Dumbarton and for the individual villages of the Vale of Leven were not produced. In larger towns and cities, district statistics mirrored the large gulf between rich and poor areas. Gibb (1983) has, for instance, compared the social statistics for old inner city districts with those of the middle class west end of Glasgow. Doubtless, if such information had been available for this study it would have shown similar, if not quite so dramatic, discrepancies between say the High Street and Kirktonhill areas of Dumbarton.

What the death rates available for Dumbarton, Bonhill Parish and, intermittently, Renton village do show is that the problems of

poverty, overcrowding and disease which led to higher death rates were greatest in the royal burgh and Renton. The simple industrial structure in the Vale of Leven was important in keeping the levels of differentiation among factory workers low, but better housing and environmental conditions may have helped also.

The death rates, infant mortality rates and infection levels among the 'middle classes' were still so much lower than those of the 'working classes'. Pollution, noise and proximity to the factory workers were regarded in much the same way as in Dumbarton, this in spite of the relative health of villages such as Alexandria. Streets close to the printworks were seen as places to avoid.

In Dumbarton the high proportion of skilled workers and the substantial developments to the east of the town allowed the elite among the 'working classes' to escape the core. These developments themselves were responsible for a decrease in the burgh's high death rates, alongside public health improvements such as the opening of the waterworks in 1874.

ASSUMPTIONS ABOUT RESIDENTIAL DIFFERENTIATION

The impression given by much of the literature concerned with residential differentiation is that it was more obvious in larger, heavily industrialized and rapidly growing towns and less obvious in the smaller and older towns. Towns regarded as being in 'transition' when the 'working classes' in becoming increasingly fragmented socially showed signs of spatial separation.

It has been demonstrated here that while the older parts of Dumbarton were indeed undifferentiated at ED scale, the 'middle classes' and the Irish were showing clear signs of segregation and dissimilarity as early as 1861. The fragmentation of the

'working classes' was a very gradual and uneven process facilitated by housing developments and the evolution of a hierarchical wage structure in the staple industries. This wage structure in itself did not promote separation as much as did the industry to which each man belonged. Particularly if a man was a foundry worker he was more liable to live in a few EDs, particularly in the Dennystown area, than in any other area of the burgh. When the two main industries are compared, a place of work, rather than social status, was the dominant factor in location. This was slightly less true for the shipyard workers who were so numerous that they inhabited a wide range of EDs. Consequently, for this group social status may have been an important factor, separating 'skilled' from 'unskilled' shipyard workers as the town developed. A deliberate shepherding of the labour elite into home ownership helped to accentuate differentiation, but in small towns like Dumbarton there appears to have been a less inevitable or inexorable progress towards separation.

Smaller towns are less ecological than large cities in the sense that the ability to drastically interfere with the 'natural habitat' is enhanced. Small scale developments, in the absolute sense, which would be lost in a large city can effect real change in the small town. As can one or two employees or industries upon which small towns may chronically depend. These can alter patterns by their actions and their performance. Segregation in larger cities may or may not be more apparent earlier, but the development of that differentiation is liable to be smoother and steadier, when viewed through the 'ten year snapshot' of the census than in the smaller town where the closure of a factory or the building of a few streets could alter patterns profoundly.

Implicit in the residential segregation debate is the notion of progression along a continuum, whether the various protagonists mentioned in Chapter 3, believe that clear patterns of differentiation existed by mid-century, or did not emerge until the latter years of the 19th century. In a large, successful, industrial town with a growing array of manufacturing retail and

service industries, which was always gaining more people than it was losing and which was physically expanding in unequivocal fashion, this may well have been the case. In smaller settlements where one or two staple industries underpinned retail and service sectors still in delicate infancy, dependent growth of net in-migration and the built environment and consequently the development of differentiation, may have been less definite, apart from the sheer scale of any segregation being of a lower order in the first instance.

The explanation given for the increasing scale of segregation is multi-faceted. Reference is made to industrialization, the fragmentation of the labour force and transport improvements allied to a growth in town size. Processes are identified in terms of filtering or invasion and succession where the better off move outwards and are replaced by the lower classes, or where the incursion of labourers in search of work prompted a flight to the suburbs by the middle classes. The residential patterning which results is based on physical growth and the demand for housing. What then if industrialization slows down, population and urban growth slackens and the demand for houses slackens? How do the landlords maintain profit and their properties by keeping them occupied and habitable, for the former helps to ensure the latter. They must cut back on their rent charges. Now if wages are not cut back just so fiercely and, more usually, a shedding of labour takes place, then demand slackens, differentials are eroded and segregation among the 'working classes' becomes much less definite. The 'higher factory' workers do not in this situation always succeed the lower 'middle classes' because these people were most often house owners and less likely to be affect by any short-term cyclical change as their labour was much less likely to be dispensed with. So in British cities there existed significant checks on the movement and fluidity of the 'working classes' which were perhaps less obvious in the North American continent where social area theory originated. British class barriers were often physical as well as social and 'working class' people found it difficult to buy their own home

both because of the wage/price differential and the need to be mobile especially in industries like shipbuilding. It was only in the late 19th century in the settlements discussed here, especially Dumbarton, that a deliberate attempt was made to involve the skilled workforce in home ownership. Even then, and until recent times, the vast majority of skilled workers in Scotland still rented property, predominantly from the local authority or the SSHA.

Developments catering for the 'labour aristocracy' may have increased absolute segregation among manual workers but among the strata of semi-skilled, unskilled and non-factory workers left behind there may even have been some desegregation if the new development meant that demand in the old core slackened and rents had to become more competitive.

Thus, the arguments about segregation have already been discussed in Chapter 3, but these discussions centred on emergent, industrializing, large towns and cities. In smaller towns where processes were less burgeoning and where the ecological mileu was more open to local or peculiar interuptions, segregation was less progressive or inevitable. This contrast between large and small towns supports the contention that one of the consequences of industrialization, albeit not independent of its other ramifications and its structure, was indeed differentiation. This is not to suggest a simple correlation between industrial growth and prosperity, and increased segregation among the 'working classes'. Higher rents because of the tremendous demand for accommodation did lead to increases in boarding and lodging. It was partly for this reason that all economically active males were considered here, for using household heads only will fail to account for the impact of lodging on the social structure of a district. While most lodgers appeared to be either in the same industry, from the same ethnic group or to have a similar status to the household head, if there was a difference it was liable to be that the lodger had a slightly inferior status to the household head. Many were young, recently arrived and

without relevant skills. The resulting pressure on the inner areas of towns, manifested not only in the debasement of their physical fabric, but in the deteriorating health of their citizens. This acted as a disincentive to both locals and potential in-migrants. Houses were built only when there was a ready demand for them as in this case. It would only be when the skilled manual worker found his way into such accommodation, either as it became available through new building or through succession, that segregation among the working classes would increase in terms of a growing separation of skilled and unskilled.

METHODOLOGICAL AND DEFINITIONAL PROBLEMS

The scale of analysis has been shown to be of prime significance in the delimitation of socially differentiated areas. It has been argued that differentiation appears to be at higher levels in larger towns because the scale of analysis, usually the ED or grid square is then fine enough to highlight large homogeneous tracts of townscape. Robb (1983) revealed the intricate social patterning which existed in Glasgow's Gorbals district throughout the second half of the 19th century. In contrast Warnes (1973) doubted if satisfactory analysis could be carried out at sub-street level, whereas Dennis (1984):

> 'doubts if it is worth trying to measure segregation statistically at scales smaller than ED or grid square level' P218).

After processing locational information here in terms of ED and street, the problems of statistical measurement at the latter scale, while not ruling out the Robb approach, do appear to present almost insurmountable problems when sampling is employed.

In the Vale of Leven street by street level analysis had to be largely abandoned because there were what could be termed primate streets which had a large proportion of a village's population

strung out along them, with a multitude of smaller streets off to either side which in many cases had too few sampled households to be statistically viable. The problem was somewhat similar in Dumbarton with the High Street exhibiting a high degree of primacy up to and beyond 1891. The size of that heterogeneous street's population doubtless distorted the street level results discussed in Chapters 16 and 17. Other streets such as Glasgow Road, Bonhill Road and Townend Road were arterial, they led from the core, or its immediate perimeter, out of the burgh with the result that social status, occupational and even ethnic 'scores' for each street may have suggested an undifferentiated pattern, whereas the 'shading' of each street changed as they passed through different sectors of the town. Consequently, street level analysis is most effective in an investigation of patterns within an ED which may be in need of further scrutiny, but its effectiveness in a whole town analysis is tempered by difficulties of street population size and heterogeneity.

There may be the need for a comprehensive sub - ED analysis in certain studies, but street level investigations are not necessarily the answer. There was often more differentiation between frontages and back courts within a street than between streets. In a case where there were parallel streets or tenement squares the back courts might constitute one low status, homogeneous social area and the houses facing the street another. In Scotland, where tenemental living was more common, vertical segregation may have been important, with trades people in particular occupying ground floor premises.

Address information in the cebs is usually not precise enough, nor are large scale plans sufficiently address specific to permit fine grained studies of most parts of Britain's Victorian towns. The ED scale of investigation may lead to some unsatisfactory descriptions of EDs as being heterogeneous or mixed, when distinct social patterns exist at sub ED level, but it is a relatively uniform scale which does allow important comparisons to be drawn from a variety of studies and subsequently allows the development of coherent theory.

One impediment to theoretical advance has been the initial disagreement over when Victorian cities became segregated at ED level and later arguments about the extent of differences which existed between cities like Liverpool and Leeds, for example.

Pooley (1984) has attempted to reconcile the individual views expressed on this issue by suggesting that much of the difference can be accounted for by contrasts in interpretation where some regard:

> 'differentiation as a majority situation with respect to certain characteristics within areas of specified scale (whereas) Ward in his work on Leeds has chosen to define differentiation as the existence of areas, at various scales, which are exclusively populated by families or individuals with certain characteristics'(P132).

A clearer interpretation might be possible if researchers decide to distinguish between 'differentiation' and 'segregation'. The terms 'residential differentiation' and 'residential segregation' are often regarded as interchangeable with the former being the preferred term. To avoid tedious repetition this writer and most others have tended to use these phrases as virtually synonymous. It may be time to emphasize the contrasts between the words differentiation and segregation in the light of Pooley's (1984) comments.

The Shorter Oxford Dictionary provides the following relevant definitions:

Differentiate	: 3	-	To ascertain the difference in or between.
Differentiation	: 1	-	The action of differentiality, or condition of being differentiated.
	: 2	-	(Biology) when an organ is modified into a special form or function.

Segregate : 1 - To separate from the general body, or from some particular class; to set apart, isolate, exclude.

Segregation : 1 - The act of segregating.

: b - The separation of a portion or portions of a collective or complex unity from the rest, the isolation of particular constituents of a compound or mixture.

In the knowledge of these definitions might it not be better to define the 'exclusive' separation of Ward (1975) as 'segregation' and the 'majority situation' of Pooley (1984) as a degree of 'differentiation' (to be defined either qualitatively, as 'high' or 'low' for example; or quantitively using indices of segregation, dissimilarity and Location Quotients for example)? In the course of normal conversation if a group is described as segregated, exclusive separation is assumed, whereas if a group is described as 'differentiated' a qualification is required to describe the extent of that differentiation. If writers were to adopt this practice then it should lead to fewer examples of the misunderstanding which Pooley (1984) has sought to rectify.

POSTSCRIPT

Hopefully the approach employed in this study lives up to Richard Lawton's (1987) recent request for a more humanistic emphasis in Historical Geography. Perhaps the individual has not been brought into centre stage as he would have liked, but the computer was employed here as a sorting tool rather than as a dehumanising vehicle for advanced statistical analysis. The approach has been broad based, focussing on the processes of change, or the contrasts between settlements; and on links between occupation, industry, status, migrational and residential behaviour. Previous work on the historical and social development of this area (1975, 1981) has provided a depth of local knowledge essential to any settlement study. The intention being to marry this knowledge (with further study of local sources and an attempt to employ some scant surviving oral tradition) to the inferences derived from the statistical data which has been the backbone of this work.

Spatial significance of social patterns within the settlements was not assumed in the descriptions and explanations of changing population, ethnic, occupational and status structures. The main avenue for viewing population and ethnic change was in the attempt to trace migrational trends as they affected Dumbarton and the Vale of Leven at what has been termed the 'mezo' scale.

Explanation in this area was partly found in the structure and performance of industry in, for example, the sex imbalance in Dumbarton's industry which led to differential in-migration in favour of males; the youthful and ephemeral nature of the Vale of Leven's female labour force and the marked decline in net in-migration within a decade of great economic difficulties for the Vale (1861-1871).

It was only when an aspatial, but dynamic, view of society in these settlements had been established, that an investigation

into areal significance and change could occur; this to allay a charge of 'spatial fetishism' (Peet 1977), that is, that explanations in society are only sought by Geographers through spatial investigation which assumes an implicit belief that location was always significant.

As stated in the first paragraph of this postscript a grounding in local knowledge was the springboard for the present study, but Dumbarton and Vale of Leven's intrinsic merits for this type of investigation are outlined in Chapter 1. It would be possible to label the work a 'local history', a term often used pejoratively to suggest the very narrow work of earnest amateurs, beavering away within the dusty basements of local libraries. This writer would accept neither that this study has no wider appeal beyond its areal strictures, nor that outdated and peripheral view of local history.

Richard Lawton and Colin Pooley on Liverpool, David Ward on Leeds, Michael Anderson on Lancashire and Richard Dennis on Huddersfield, are among the prominent names and places raising the level of debate beyond mere local confines towards national and international comparisons of urban and social development in the industrial age. They have challenged accepted views of the past as well as the methodologies and philosophies of Historical Geography and Social History. Their works have been cited freely here as providing areal comparisons with, and methodological props for, this study.

The aim here being to highlight firstly what was unique to the study area, as well as confirming much which was common to the development of Scottish and British settlements in the 19th century; and secondly, to offer some explanations as to that uniqueness or commonality.

NOTES

1. See however suceeding section on 'Industrialization'.

2. From ceb information collected by MrA Gibb, University of Glasgow, and quoted with his permission.

3. See however Chapter 16 which suggests that this could, in part, be a statistical illusion.

APPENDICES

APPENDIX 1

STREET CODES - (COLUMNS 9 & 10)

DUMBARTON

1. Rochead Place
2. William Street
3. Levenbank (Street)
4. Levenhaugh Street
5. Morton's Land
6. High Street
7. Quay Street/Quay/Quay Pen
8. West Bridgend/Comelybank/Helenslee/Kirktonhill
9. Brewery Lane
10. Bridge Street
11. Church Place
12. College Street
13. College Park Street
14. Risk Street
15. Church Street
16. McLean Place
17. Allen Place and surrounding area
18. Townhead Road and surrounding area
19. Strathleven Place
20. Castle Street
21. Castle Terrace
22. Glasgow Road
23. Leven Street
24. Castle Road
25. Clyde Street
26. Henryshott

27. Levenford Place
28. Levengrove Terrace
29. Burnside Street
30. Burnside Place
31. Meadowbank Street and adjoining cottage
32. Croft Loan
33. Bonhill Road
34. Cemetery Road
35. Westonlee
36. Greenvale Terrace
37. Poindfauld
38. Park Crescent
39. Overburn Terrace
40. Wallace Street
41. Victoria Street
42. Knoxland Square and adjoining cottages
43. Bruce Street
44. Castlegreen Terrace
45. George Street
46. Burnside Terrace

VALE OF LEVEN/ALEXANDRIA

1. Crescent
2. Bridge Street
3. Albert Street
4. Victoria Street
5. Bank Street
6. Levenbank Street
7. Church Street
8. Random Street
9. Mitchell Street
10. Main Street

11. Overtoun Street
12. Middleton Street/Lane
13. North Street (formerly Gas Street)
14. Linnbrane (Terrace)
15. Susannah Street including Gray Place
16. Cross Row (Street)
17. Alexander Street (formerly Linnbrane)
18. Charleston Row
50. Bonhill Place
56. The Crescent
60. Leven Street
61. Steven Street
62. Gray Street
63. John Street
64. Hill Street
65. Wilson Street
66. James Street
67. India Street

BONHILL

19. Croft Loan
20. Main Street including Braehead and Brysons's Loan
21. Raglan Place
22. Dillichip Cottages/Cordale Street (Loan)
23. Burn Street
24. Croft Lane (Street)
25. George Street
26. Campbell Street
28. Hillbank (Street)
29. Bridge End/North Main Street
51. Albert Street

57. Dalmonach and Hilton
58. Cannon Row
59. Graham's Park/Sandbank
68. Dillichip Terrace

JAMESTOWN

30. Milton Terrace and adjacent cottages
31. Levenbank Terrace and adjacent cottages
32. Bonhill Road
33. Back Road
34. Balloch and Dalvait Houses
52. Main Street
69. Napierston Terrace
70. Burnside Terrace

RENTON

35. Station Street
36. Main Street
37. Red Row
38. Ash Tree Place
39. Fulton Place
40. Millburn (Place)
41. Back Street
42. Millar Place
43. King Street
44. Long Stairs Place

45. Stirling Street
46. Waterside
47. Thimble Street
48. Burn Street
53. Market Street
54. Dalquhurn Works Houses
55. Church Place
71. Hall Street
72. Carman Road and Upper Renton
73. Leven Street
74. Lennox Street
75. Alexander Street
76. John Street

APPENDIX 2

OCCUPATIONAL CATEGORIES COLUMNS 16-19
AFTER BOOTH REPRODUCED BY ARMSTRONG (1972)

Digits 16 and 17 relate to major occupational categories.

Digits 18 and 19 relate to sub-divisions within each major category.

THE MAJOR CATEGORIES ARE:

1. Agriculture
2. Mining
3. Building
4. Manufacturing
5. Transport
6. Dealing
7. Industrial Service
8. Public Service and Professional Sector
9. Domestic Service
10. Residual Population

THE SUB CATEGORIES ARE:

CODE	DESCRIPTION
1.	AGRICULTURE
1	Farming, includes farmers, labourers, etc, forestry

2 Land service, eg agricultural machine properties

3 Breeding, includes breeders, vets, drovers, farriers

4 Fishing

2. MINING

1 Mining

2 Quarrying

3 Brickmaking, but includes sand, flint and gravel workers

Salt and water works

3. BUILDING

1 Management, eg architects, builders

2 Operatives, eg bricklayers, carpenters, thatchers, glaziers, plumbers, painters

3 Roadmaking, includes railway navvies

4. MANUFACTURE

1 Machinery and unspecified engine fitters

2 Tools, includes gemsmiths, pin and steel pen makers

3	Shipbuilding, includes sailmakers
4	Iron and steel, includes blacksmiths
5	Copper, tin, lead, etc includes whitesmiths
6	Gold, silver, jewellery
7	Earthenware, includes glass, plaster and cement
8	Coals and gas
9	Chemical, includes ink and matches
10	Furs and leather
11	Glue, tallow, etc includes soap, manure
12	Hair, includes brushes, quills, combs, bone workers
13	Woodworkers, excludes MF 14
14	Furniture, includes French Polishers and undertakers
15	Harness and carriage, both road and rail
16	Paper
17	Floocloth and waterproof
18	Woollen, includes knitters of wool
19	Cotton and silk

20	Flax, hemp, etc	includes rope and net makers
21	Lace	
22	Dyeing	
23	Dress, includes hosiery, hat, glove, footwear	
24	Sundries connected with dress, eg umbrellas, buttons	
25	Food preparation, includes cattle food	
26	Baking	
27	Drink preparation, includes maltsters	
28	Smoking, includes pipes	
29	Watches, instruments and toys	
30	Printing and bookbinding	
31	Unspecified manufacturers, artisans, apprentices, factory labourers, watchmen	

5. TRANSPORT

1	Warehouse and docks (excludes Manchester warehousemen)	
2	Ocean navigation, includes ship's cooks and stewards	

3 Inland navigation

4 Railways

5 Roads, includes toll collectors, carters

6. DEALING

1 Coals

2 Raw materials, eg timber, corn, wool

3 Clothing materials, eg cloth merchants, Manchester warehousemen

4 Dress (presumably both wholesale and retail)

5 Food (do) and other shopkeepers unless stated

6 Tobacco (do)

7 Wines, spirits and hotels (do)

8 Lodging and coffee houses

9 Furniture (apparently wholesalers), but includes pawnbrokers including Glass

10 Stationery and publications

11 Household utensils and ornaments, eg ironmongers, paints

12 General dealers including Hawkers

13 Unspecified, eg merchants, brokers, valuers, salesman

7 INDUSTRIAL SERVICE

1 Banking, insurance and accounts

2 General labourers

3 Clerks

8 PUBLIC SERVICE AND PROFESSIONAL SECTOR

1 Administration (central)

2 Administration (local) including Postmen

3 Administration (sanitary) ie town drainage and scavenging, Firemen, Janitors

4 Army, officers and men, active and retired

5 Navy (do)

6 Police and Prison Officers

7 Law

8 Medicine, includes Dentists, Chemists

9 Painting, ie art, but includes animal preservers

10 Music and amusements, eg performers, games service

11 Literature, ie Authors, Editors, Journalists, etc

12 Science

13 Education

14 Religion

15 Hairdressing

9 DOMESTIC SERVICE

1 Indoor service, includes institutional servants and housekeepers

2 Outdoor service

3 Extra service, appears to be self-employed, eg chimney sweeps, washerwomen

10 RESIDUAL POPULATION

0 Dependent Children and Housewives

1 Property Owners

2 Annuitants

3 Paupers, those on 'relief' etc

APPENDIX 3

SOCIAL STATUS CATEGORIES

COLUMN 20 (AFTER ARMSTRONG W A 1974)

i. Professional

ii. Intermediate

iii. Skilled

iv. Partly Skilled

v. Unskilled

vi. Residual

COLUMNS 21 AND 22 (AFTER ANDERSON M 1972)

i. Professional and Managerial

ii. Clerical

iii. Trade

iv. Higher Factory (Skilled Work)

v. Artisan

vi. Lower Factory (Unskilled Work)

vii. Labourer

viii. Clothing Worker - Dressmaker, Milliner etc

ix. Unclassified

x. Not Employed

APPENDIX 4

BIRTHPLACE CODES COLUMNS 23, 24 AND 25 (AFTER McLAUGHLIN - SEE NOTE BELOW)

Each person was assigned a 3 digit birthplace code.

If the first digit is a 1 then the person was born in Scotland.

If the first digit is a 2 then the person was born in Ireland.

If the first digit is a 3 then the person was born in England or Wales.

If the first digit is a 4 then the person was born outwith Britain and Ireland.

The scheme was adapted from one used by David McLaughlin sometime research student in the Department of Geography, University of Glasgow, and used with his permission.

Details of Birthplace Codes:

RENFREWSHIRE

101	Greenock
102	Gourock, Inverkip, Kilmacolm

103 Port Glasgow

104 Bridge of Weir, Houston, Crosslee, Erskine

105 Johnstone, Linwood, Kilbarchan

106 Inchinnan, Renfrew

107 Paisley

108 Other named parties

109 (Missing)

(other named parishes in Renfrewshire are in the extreme east of the county, with the exception of Lochwinnoch).

ARGYLL

120 Dunoon

121 Cowal Peninsula

122 Kintyre

123 Islay, Jura, Colonsay, Gigha

124 Knapdale

125 Argyll, Lorn, Appin, Black Mount

126 Oban

127 Mull, Coll, Tiree

128 Ardnamurchan, Morven

129 (Missing)

AYRSHIRE AND BUTE

130 Largs, Kilbride and Garnock Valley

131 Ardrossan - Kilwinning area

132	Irvine, Kilmarnock and Irvine Valley
133	Troon, Ayr, Maybole
134	Catrine - Cumnock area
135	South Ayrshire
136	Rothesay
137	Rest of Bute and Cumbraes
138	Arran
139	(Missing)

DUNBARTONSHIRE

140	Dumbarton
141	Bonhill including Alexandria and Jamestown
142	Cardross including Renton
143	Helensburgh/Rhu (Row)/Roseneath
144	Kilmaronock
145	Kilpatrick/Milton/Bowling
146	Luss
147	East Dunbartonshire
148	Rest of West Dunbartonshire
149	(Missing)

SOUTHERN COUNTIES

150	Wigtownshire
151	Kircudbright Stewartry
152	Dumfries-shire

153 Roxburgh, Selkirk and Peebles

154 Berwickshire

155 West Lothian

156 Midlothian (not Edinburgh/Leith)

157 East Lothian

158 Edinburgh and Leith

159 (Missing)

EASTERN AND CENTRAL COUNTIES

160 Stirling (town)

161 Stirlingshire - Buchanan

162 Stirlingshire - Drymen

163 Rest of Stirlingshire

164 Fife/Kinross

165 Clackmannanshire

166 Perthshire

167 Forfar - Dundee

168 Forfar not Dundee

169 (Missing)

NORTH EASTERN COUNTIES

170 Aberdeen City

171 Aberdeenshire (not Aberdeen)

172 Kincardineshire

173	Banffshire
174	Moray
175	Nainshire
179	(Missing)

NORTHERN COUNTIES

180	Inverness-shire Skye parishes
181	Inverness-shire (not Skye)
182	Ross and Cromarty
183	Sutherland
184	Caithness
185	Orkney
186	Zetland
189	(Missing)

LANARKSHIRE

190	Glasgow
191	Parishes around Glasgow*
192	Motherwell - Hamilton area
193	Airdrie/Coatbridge/Monklands area
194	Rest of Lanarkshire

* includes some Renfrewshire parishes like Pollokshaws and Eastwood and parishes which would eventually be annexed by Glasgow like Maryhill.

REST OF UK

IRELAND (IRELAND UNSPECIFIED - 299)

ULSTER

201 County Antrim

202 Belfast

203 County Down

204 County Armagh

205 County Tyrone

206 County Londonderry

207 County Donegal

208 County Fermanagh

CONNACHT

211 County Roscommon

212 Sligo

213 Galway

214 Mayo

LEINSTER

221 County Dublin

222 County Offaly

MUNSTER

231 County Cork

ENGLAND, ETC (ENGLAND UNSPECIFIED - 399)

NORTH

301	Cumberland
302	Carlisle
303	Northumberland
304	Newcastle-upon-Tyne
305	Yorkshire
306	Manchester
307	Chester

MIDLAND

310	Derby
311	Nottinghamshire

SOUTHERN

321	London
322	Kent
323	Devon
324	Cornwall

ISLE OF MAN 339

WALES 349

ELSEWHERE

EUROPE

411	Germany
412	Poland
413	Scandinavia
414	Italy
415	Gibralter
416	Russia
417	Belgium
418	France
419	Spain

431	Australia/New Zealand
432	East Indies
433	Egypt
434	Manila
435	Mauritius
436	St Helena
437	At Sea
439	India
440	China

AMERICA

421	Canada
422	United States of America
423	Barbados
424	West Indies
429	(North America unspecified)

APPENDIX 5

Selected Indices of Dissimilarity and Segregation for Dumbarton, using Social Status Classification Scheme 'A' (Armstrong 1974).

INDICE	SOCIAL STATUS GROUP	1861		1871		1881		1891	
		ED	ST	ED	ST	ED	ST	ED	ST
I_D	I, II, v, IV, V	35.8	41.8	38.4	33.8	48.4	44.3	48.7	54.4
	III, v, IV, V	16.1	19.5	21.3	22.8	23.9	23.3	32.8	32.6
I_S	I, II	26.9	32.9	37.3	33.7	42.6	38.8	40.9	43.3
	IV, V	17.9	20.1	16.9	21.9	24.4	22	27.9	27.5

BIBLIOGRAPHY

Adams I H (1978) - The Making of Urban Scotland (London)

Anderson M (1972) - 'Standard Tabulation Procedures for the Census Enumerators' Books 1851-1891' in Wrigley, EA (ed) Nineteenth Century Society. Essays in the Use of Quantitative Methods for the Study of Social Data (Cambridge) pp47-81.

Anderson M (1982) - 'Indicators of Population Change & Stability in Nineteenth Century Cities: Some Sceptical Comments' in Johnson, J H & Pooley, C G (eds). The Structure of Nineteenth Century Cities (London) pp283-298.

Armstrong W A (1968) - 'The Interpretation of the Census Enumerators' Books for Victorian Towns' in Dyos, H J. The Study of Urban History (London) pp67-85.

Armstrong W A (1974) - Stability & Change in an English County Town: a social study of York 1801-1851 (Cambridge).

Aspinwall, B & McCaffrey, J F (1985) - 'A Comparative View of the Irish in Edinburgh in the Nineteenth Century' in Swift & Gilley. The Irish in the Victorian City (London) pp130-157.

Baines, D E (1972) - 'The Use of Published Census Data in Migration Studies' in Wrigley, EA (ed) Nineteenth Century Society ... pp311-335.

Barke, M (1976) - 'The Population of Brighouse, West Yorkshire, in 1851'. Yorkshire Archaelogical Journal, Vol 48 pp135-146.

Barke, M & Johnson, T (1982) - 'Emerging Residential Segregation in a Nineteenth Century Small Town: The Case of Falkirk'. Scottish Geographical Magazine, Vol 98 No 2 pp87-100.

Bremner, D (1869) - The Industries of Scotland, their rise progress and present condition. (Edinburgh) New Edition 1967.

Booth, C (1868) - 'Occupations of the People of the United Kingdom 1801-1881'. Journal of the Royal Statistical Society, xLix pp314-435.

Caird, J B (1980) - 'The Reshaped Agricultural Landscape' in Parry, M L, & Slater, T R. The Making of the Scottish Countryside (London) pp203-222.

Cairncross, A K (1949) - 'Internal Migration in Victorian England'. The Manchester School, 17 pp67-87.

Cairncross, A K (1953) - Home & Foreign Investment 1870-1913 (Cambridge).

Campbell, R H (1980) - The Rise & Fall of Scottish Industry (Edinburgh).

Campbell, R H (1984) - 'Inter-county Migration in Scotland & the Experience of the South West in the Nineteenth Century'. Scottish Economic & Social History, Vol 4 pp55-62.

Cannadine, D (1977) - 'Victorian Cities: how different?'. Social History, 4 pp457-482.

Cannadine, D (1982) - 'Residential Differentiation in Nineteenth Century Towns: From Shapes on the Ground to Shapes in Society' in Johnston, J H & Pooley, C G. The Structure of Nineteenth Century Cities (London) pp235-251.

Carter, H & Wheatley, S (1980) - 'Residential Segregation in Nineteenth Century Cities' Area, Vol 12 pp57-62.

Chalmers, A K (1894) - A New Life Table for Glasgow: based on the mortality of the ten years 1881-1890 (Glasgow).

Checkland, S G (1968) - 'Toward a Definition of Urban History' in Dyos, H J (ed). The Study of Urban History (London) pp343-361.

Collins, B (1981) - 'Irish Emigration to Dundee & Paisley During the First Half of the Nineteenth Century' in Goldstrom J M and Clarkson LA (eds) Irish Population, Economy & Society: Essays in Honour of the late K H Connell (Oxford) pp195-212.

Conzen, M R G (1968) - 'The Use of Town Plans in the Study of Urban History' in Dyos, H J (ed). The Study of Urban History (London) pp113-130.

Cousens, S H (1960) - 'The Regional Pattern of Emigration during the Great Irish Famine 1846-51'. Transactions and Papers of the Institute of British Geographers, No 28 pp119-134.

Cousens, S H (1961) - 'Emigration and Demographic Change in Ireland 1851-61'. Economic History Review, 2nd Series, Vol 14, pp275-288.

Cousens, S H (1965) - 'The Regional Variation in Emigration from Ireland between 1821 and 1841'. Transactions of the Institute of British Geographers, No 37, pp15-30.

Cowlard, K (1979) - 'The Identification of Social (Class) Areas and their place in Nineteenth Century Urban Development'. Transactions of the Institute of British Geographers, No 4, pp239-257.

Dennis (1977) - 'Intercensal Mobility in a Victorian City'. Transactions of the Institute of British Geographers, NS 2 1977, pp349-363.

Dennis, R (1982) - 'Stability and Change in Urban Communities: A Geographical Perspective' in Johnston J H and Pooley C G (eds). The Structure of Nineteenth Century Cities (London) pp253-281.

Dennis, R (1984) - English Industrial Cities of the Nineteenth Century. A Social Geography (Cambridge).

Dennis, R & Clout H (1980) - A Social Geography of England and Wales (Oxford).

Devine, T M (1983) - 'Highland Migration to Lowland Scotland 1760-1860'. Scottish Historical Review Vol 62 (2), No 174, pp137-149.

Disraeli, B C (1845) - Sybil; The Two Nations

Docherty, C (1975) - 'An Historical Study of the Morphology of Dumbarton up to the 1880s'. Unpublished BA dissertation, University of Strathclyde.

Docherty, C (1981) - 'The Growth of the Vale of Leven 1841-1891'.

Unpublished M Litt thesis, University of Glasgow.

Docherty, C (1982) - 'Industry and Population in the Vale of Leven 1850-1900'.

Scottish Association of Geography Teachers Journal No 11 pp54-62.

Docherty, C (1985) - 'The Rise and Fall of Industry in the Vale of Leven'.

Scottish Industrial History Vol 8 (2), pp4-14.

Duncan, B & Duncan, O D (1955) - 'Residential Distribution and Occupational Stratification'. American Journal of Sociology Vol 60, pp493-503.

Dyos, H J & Baker, A B M (1968) - 'The Possibilities of Computerising Census Data' in Dyos, H G (ed). The Study of Urban History (London), pp87-112.

Flinn, M et al (1977) - Scottish Population History from the Seventeenth Century to the Nineteenth-thirties (Edinburgh).

Foster, J (1968) - 'Nineteenth Century Towns: A Class Dimension' in Dyos, H J (ed). The Study of Urban History (London), pp281-291.

Friedlander, D & Roshier, R J (1966) - 'A Study of Internal Migration in England and Wales 1851-1951 - Geographical Patterns of Internal Migration'. Population Studies 19, pp239-279.

Freeman, T W (1957) - 'The Irish in Great Britain' Geography Journal, Vol 123, pp274-275.

Gallagher, R (1982) - 'The Vale of Leven 1914-1975: Changes in Working Class Organisation and Action' in Dickson, T Capital and class in Scotland (London), pp186-211.

Gallacher, T (1985) - 'A Tale of Two Cities: Communal Strife in Glasgow and Liverpool before 1914' in Swift, R and Gilley S. The Irish in the Victorian City (London), pp106-129.

George, P (1970) - 'Types of Migration of the Population According to the Professional and Social Composition of Migrants' in Jansen, C J (ed). Readings in the Sociology of Migration (Oxford),pp39-47.

Gibb, A (1983) - Glasgow: The Making of a City (London).

Gordon, G & Robb, J (1981) - 'Small Scale Residential Differentiation in Nineteenth Century Scottish Cities'. Scottish Geographical Magazine Vol 97 (2), pp77-84

Grigg, D B (1977) - 'E G Ravenstein and the Laws of Migration'. Journal of Historical Geography Vol 3 (1), pp41-54.

Handley, J E (1964) - The Irish in Scotland (Glasgow).

Holmes, R C (1973) - 'Ownership and Migration from a Study of Rate Books'. Area 5, pp242-251.

Irving, J (1860) - The History of Dunbartonshire (Dumbarton).

Jackson, J A (1963) - The Irish in Britain (London).

Jackson, J A (1969) - Migration (Cambridge).

Jackson, J T (1981) - 'Housing Areas in Mid-Victorian Wigan and St Helen's'. Transactions of the Institute of British Geographers. NS Vol 6 (4), pp413-432.

Jansen, C J (1970) - Readings in the Sociology of Migration (Oxford).

Johnson, J H (1967) - 'Harvest Migration from Nineteenth Century Ireland'. Transactions of the Institute of British Geographers. Publication No 41, pp97-112.

Johnson, J H & Pooley, C G (1982) - The Structure of Nineteenth Century Cities (London).

Johnston, R J (1971) - 'Some Limitation on Factorial Ecologies and Social Area Analysis'. Economic Geography 47 pp314-323.

Jones, H (1986) - 'Evolution of Scottish Migration Patterns: A Social Relations of Production Approach'. Scottish Geographical Magazine Vol 102 (3), pp151-164.

Lamont, D W (1976) - Population, Migration and Social Area Change in Central Glasgow 1871-1891. A Study in Applied Factorial Ecology. Unpublished Ph D thesis University of Glasgow.

Lawton, R (1959) - 'Irish Immigration to England and Wales in the mid-Nineteenth Century'. Irish Geography Vol 4, pp35-54.

Lawton, R (1972) - 'An Age of Great Cities'. Town Planning Review, Vol 43, pp199-224.

Lawton, R (ed) (1978) - The Census and Social Structure: An Interpretative Guide to Nineteenth Century Censuses for England and Wales (London).

Lawton, R (1979) - 'Mobility in Nineteenth Century British Cities' Geography Journal, 145, pp206-224.

Lawton, R (1987) - 'Peopling the Past'. Transactions of the Institute of British Geographers NS 12, pp259-283.

Lawton, R & Pooley, C G (1975) - 'The Urban Dimensions of Nineteenth Century Liverpool'. Social Geography of Nineteenth Century Merseyside Project Working Paper No 4.

Lawton, R & Pooley, C G (1976) - 'The Social Geography of Merseyside in the Nineteenth Century'. Final Report to the SSRC.

Lawton, R & Pooley, C G (1978) - 'Problems and Potentialities for the Study of Internal Population Mobility in Nineteenth Century England'. Canadian Studies in Population Vol 5, pp69-84.

Lee, E S (1969) - 'A Theory of Migration' in Jackson, J A (ed). Migration (Cambridge), pp282-297.

Lees, L H (1969) - 'Patterns of Lower Class Life - Irish Slum Communities in Nineteenth Century London' in Thernstrom, S and Sennett, R. Nineteenth Century Cities (New Haven, Conn), pp359-385.

Levi, L (1863) - On the Cotton Trade and Manufacture as Affected by the Civil War in America. Journal of the Royal Statistical Society, Vol 26, pp26-48.

Lobban, R D (1969) - The Migration of Highlanders into Lowland Scotland (c 1750-1890) with particular reference to Greenock. Unpublished Ph D thesis: University of Edinburgh.

Lobban, R D (1971) - 'The Irish Community in Greenock in the Nineteenth Century'. Irish Geography Vol 6, pp270-281.

Lockhart, D G (1980) - 'The Planned Villages' in Parry, M L and Slater, T R (eds). The Making of the Scottish Countryside (London), pp249-270.

Lockhart, D G (1982) - 'Patterns of Migration and Movement of Labour to the Planned Villages of North East Scotland'. Scottish Geographical Magazine Vol 98 (1), pp35-49.

Lockhart, D G (1986) - 'Migration to Planned Villages in Scotland between 1725 and 1850'. Scottish Geographical Magazine Vol 102 (3), pp165-180.

Marshall, J D (1968) - 'Colonisation as a Factor in the Planting of Towns in North West England' in Dyos, H J (ed). The Study of Urban History, pp215-230.

Marwick, J D (1909) - The River Clyde and the Clyde Burghs (Glasgow).

MacDonald, D F (1937) - Scotlands' Shifting Population 1770-1850 (Glasgow).

MacPhail, I M M (1979) - Dumbarton Castle (Edinburgh).

Neale, R S (1981) - Class in English History 1680-1850 (Oxford).

Neill, J (1912) - Records and Reminiscences of Bonhill Parish (Dumbarton).

O'Grada, C (1977) - 'Some Aspects of Nineteenth Century Irish Emigration' in Cullen L M and Smout T C Comparative Aspects of Scottish and Irish Economic and Social History (Edinburgh), pp65-73.

O'Tuathaigh, M A G (1981) - 'The Irish in Nineteenth Century Britain: Problems of integration. Royal Historical Society' Transactions 31, pp149-173.

Ogden, P E (1987) - 'Historical Demography' in Pacione, M (ed). Historical Geography: Progress and Prospect (London), pp217-249.

Openshaw, S (1973) - 'An Empirical Study of the effects of Scale on Principal Components and Factorial Studies of Spatial Association'. Paper to Institute of British Geographers Annual Conference (Birmingham).

Osborne, B D (1980) - 'Dumbarton Shipbuilding and Workèrs' Housing 1850-1900'. Scottish Urban History Vol 3 (1), pp2-11.

Osborne, R H (1958) - 'The Movements of People in Scotland 1851-1951'. Scottish Studies, Vol 2, pp1-46.

Parry, M L & Slater, T R (1980) - The Making of the Scottish Countryside (London).

Peet, R (1977) - 'The Development of Radical Geography in the United States'. Progress in Human Geography 1, pp64-89.

Perkin, H (1969) - The Origins of Modern English Society 1780-1880 (London).

Peterson, W (1970) - 'A General Typology of Migration' in Jansen, C J (ed) Readings in the Sociology of Migration (Oxford), pp49-68.

Pollard, S & Robertson, P (1979) - The British Shipbuilding Industry 1870-1914 (London).

Pooley, C G (1977) - 'The Residential Segregation of Migrant Communities in Mid-Victorian Liverpool'. Transactions of the Institute of British Geographers NS 2 (3), pp364-381.

Pooley, C G (1979a) - 'Residential Differentiation in the Nineteenth Century City'. British Archaelogical Reports, Series 59, pp161-186.

Pooley, C G (1979b) - 'Residential Mobility in the Victorian City'. Transactions of the Institute of British Geographers, NS 4, pp258-277.

Pooley, C G. (1982) - 'Choice and Constraint in the Nineteenth Century City: A Basis for Residential Segregation' in Johnson, J H and Pooley, C G. The Structure of Nineteenth Century Cities, pp199-233.

Pooley, C G (1984) - 'Residential Differentiation in Victorian Cities: A reassessment'. Transactions of the Institute of British Geographers NS 9 (2), pp131-144.

Price, C (1969) - 'The Study of Assimilation' in Jackson, J A. Migration (London), pp181-237.

Ravenstein, E G (1885 and 1889) - 'The Laws of Migration'. Journal of the Royal Statistical Society, Vol 18, pp167-235 and Vol 22, pp241-305.

Redford, A (1926) - Labour Migration in England 1800-1850 (Manchester).

Richardson, C (1968) - 'Irish Settlement in Mid-Nineteenth Century Bradford'. Yorkshire Bulletin of Economic and Social Research, Vol 20, pp40-57.

Robb, J G (1979) - 'Persistence and Change in Nineteenth Century Gorbals. Problems of a small scale Study of Residential Differentiation'. University of Strathclyde, Department of Geography, Research Seminar Series No 6.

Robb, J G (1983) - 'Suburb and Slum in the Gorbals. Social and Residential Change 1800-1900' in Gordon, G and Dicks, B. Scottish Urban History (Aberdeen), pp130-167.

Robson, B T (1966) - 'An Ecological Analysis of the Evolution of Residential Areas in Sunderland'. Urban Studies, Vol 3 (2), pp120-142.

Robson, B T (1969) - Urban Analysis - A Study of City Structure (Cambridge).

Rodger, R (1982) - 'Rents and Ground Rents: Housing and the Land Market in Nineteenth Century Britain' in Johnston, J H and Pooley, C G. The Structure of Nineteenth Century Cities (London), pp39-74.

Rodger, R (1985) - 'Employment, Wages and Poverty in the Scottish Cities 1841-1914' in Gordon, G (ed). Perspectives of the Scottish City (Aberdeen), pp25-63.

Rose, A M (1970) - 'Distance of Migration and Socio-Economic Status of Migrants' in Jansen, C J. Readings in the Sociology of Migration (Oxford), pp85-91.

Royle, S A (1977) - 'Social Stratification from Early Census Returns: A new approach'. Area, Vol 9 (3), pp215-219.

Schofield, R S (1972) - 'Sampling in Historical Research' in Wrigley, E A Nineteenth Century Society: Essays in the Use of Quantitative Methods for the Study of Social Data (Cambridge), pp146-190.

Schnore, L F (1968) - 'Problems in the Quantitative Study of Urban History' in Dyos, H J. The Study of urban History (London), pp189-208.

Shaw, M (1977) - 'The Ecology of Social Change: Wolverhampton 1851-1871'. Transactions of the Institute of British Geographers NS 2 (3), pp332-348.

Shevky, E & Bell, W (1955) - Social Area Analysis (Stanford, California).

Short, J R (1980) - Urban Data Sources (London).

Slaven, A (1975) - The Development of the West of Scotland 1750-1960 (London).

Smout, T C (1986) - A Century of the Scottish People 1830-1950 (London).

Stirling, T B (1915) - The History of the Vale of Leven Co-operative Society Limited (Glasgow).

Strang, J (1861) - 'On the Altered Condition of the Embroidered Muslin Manufacture of Scotland and Ireland since 1857'. Journal of the Royal Statistical Society Vol 25, pp515-518.

Swift, R & Gilley S (1985) - The Irish in the Victorian City (London).

Tillott, P M (1972) - 'Sources of Inaccuracy in the 1851 and 1861 Censuses' in Wrigley, E A (ed). Nineteenth Century Society: Essays in the Use of Quantitative Methods for the Study of Social Data (Cambridge), pp83-133.

Wallwork, K L (1968) - 'The Calico Printing Industry of Lancastria in the 1840s'. Transactions of the Institute of British Geographers Vol 45, pp143-157.

Ward, D (1975) - 'Victorian Cities: How Modern?' Journal of Historical Geography Vol 1 (2), pp135-151.

Warnes, A (1973) - 'Residential Patterns in an Emerging Industrial Town' in Clarke, B D and Gleave, M B (Eds). Social Patterns in Cities. Institute of British Geographers Special Publication No 5, pp169-189.

Whyte, I D (1978) - 'Scottish Historical Geography. A Review'. Scottish Geographical Magazine Vol 94, pp4-23.

Whyte, I D (1981) - 'The Evolution of Rural Settlement in Lowland Scotland in Medieval and Early Modern Times. An Exploration'. Scottish Geographical Magazine Vol 97, pp4-15.

Wood, I (1978) - 'Irish Immigrants and Scottish Radicalism 1880-1906' in MacDougall, I. Essays in Scottish Labour History (Edinburgh), pp65-89.

Zachariah, K C (1962) - 'A Note on the Census Survival Ratio Method of Estimating Net Migrations'. Journal of American Statistical Association Vol 57, pp175-183.